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Scientific Method and Appeal to Supernatural Agency: A Christian Case for Modest Methodological Naturalism

A brush fire, whipped up by a sudden wind, posed a threat to the village [of Antsirabé]. The villagers removed their possessions from their thatched huts. The fire was a meter from the first hut. Fed by a hedgerow, it was already lapping the first rooftop. A catechist took an image of Victoire [Rasoamanarivo (1848–1894), a married woman revered in Madagascar as the mother of Roman Catholicism for the role she assumed in preserving and teaching Catholicism at a time when all the missionaries had been expelled from that country] in his hands, knelt and raised the image toward the flame, saying, “If you are truly the Servant of God, stop this fire.”

The catechist had barely gotten to his feet when the wind changed suddenly and turned the fire in another direction.¹

Many local Christians, and some in Rome who looked into the matter, regarded the event as a miracle. The village, they believed, was spared by supernatural agency. Appeal to supernatural agency to explain some of what goes on in the world around us is an essential

feature of Christianity. Indeed, Christianity is founded on miraculous events. The command to pray for what we need² suggests, and Christian tradition insists, that supernatural agency continues to be a feature of our world. Hence, the belief of the Christian villagers that their salvation was not a matter of good luck but of miraculous intervention.

Obviously, Christians do not think that all events—not even all unusual events—are miracles. For the explanation of most events, they turn to the same natural regularities to which everyone else turns. In other words, they turn to science, or, to put the point in a way that highlights what is at issue here, they use the scientific method.

The fact that Christians are willing to appeal either to supernatural agency or to natural regularity depending on the circumstances of the event to be explained raises interesting epistemological questions. What similarities and differences between these two explanatory strategies can be identified? Is appeal to supernatural agency on a par with appeal to natural causes, so that there is one general method that encompasses (and evaluates) both? Are they completely different approaches to explanation? Does the willingness to use one preclude or otherwise interfere with the use of the other? Is there a possibility of conflict, with the two methods yielding distinct and incompatible explanations of the same phenomenon?

These questions are particularly important because of the eagerness of many anti-Christian polemicists to draw a sharp contrast between rationality and science, on the one hand, and faith, theology, and religion, on the other. The implication is sometimes that it is difficult to reconcile the acceptance of the miracle claims of Christians with the mental habits that seem to have been necessary to the production of modern science's account of the natural world.

In this paper I will argue that the scientific method and the appeal to supernatural agency are generically similar (in that both are

instances of the same legitimate pattern of reasoning—appeal to the best explanation) but specifically different (in that there are significant differences in the method by which and in the extent to which each can improve early, reasonably good, explanations). Although nothing in principle precludes competition between natural and supernatural explanations of the same event, the prospect of conflict between scientists and theologians (or believers and non-believers) is diminished by two considerations. The first is the philosophical and theological plausibility of a modest methodological naturalism. The second is the complementarity between spheres of scientific and theological special interest.

1. Definitions

I want to begin with some definitions, distinctions, and comments on the terms I used in my title.

By “the scientific method” I mean the method or methods by which modern scientists develop evidence and arguments for explanations of (or theories about) natural phenomena. Arguments both for large-scale theories (e.g., the atomic theory of matter or evolutionary biology) and for more modest explanations (e.g. of the San Francisco earthquake) apply a common logical schema that transcends the disputes between Sir Karl Popper, Thomas Kuhn, and other contemporary philosophers of science.

The term “supernatural agency” in proper theological usage would be limited to divine action. This paper is primarily concerned with God’s action in the world, though occasional reference will also be made to preternatural agency (e.g., demonic possession or apparitions of the Blessed Virgin Mary).

I use the term “natural” to refer to all beings that have bodies—human beings no less than animals, plants, and minerals—and to all their operations (including human free choices).

Three kinds of divine agency with respect to the natural world might be distinguished—creation, conservation,³ and intervention. One of these—conservation—is clearly not agency *in* the natural order, which is the object of inquiry by use of the scientific method. A second—intervention—clearly is agency *in* that order. This will be the main topic of discussion here. The third type of agency—creation—is a more difficult case. It is not inherently agency *in* the natural world, but creative addition to an already existing natural world would be very much like intervention. The matter will be taken up below.

Three forms of intervention can be distinguished. The first is suspension of the laws of nature, such as must happen when a person rises from the dead. The second is the determination of quantum events. If, as one interpretation suggests, quantum events are not naturally determined, but are statistically distributed among several possibilities, a supernatural intervention could determine these (within the specified statistical parameters) without suspending any laws of nature. Third, if human beings have the power of free choice, that is, the power to act in ways not determined by the laws of nature, then supernatural agents might be able to prevent a choice from being made, to influence a choice, or (possibly) to prevent execution of a choice, also without suspending the laws of nature.⁴ Moral miracles—“a manner or mode of deliberate action . . . that notably surpasses the observed and constant level of human behavior”⁵—would be one subtype of such intervention. In this paper I will concentrate on corporeal intervention, namely, intervention in ways other than interference with the actions of the will of free natural beings.

Naturalism, as I suggested above, comes in several forms. Ontological naturalism might be characterized as commitment to the following theses:

- (1a) Only natural entities exist,⁶ or at least

- (1b) All natural events have natural causes;⁷ and
- (2) Divine and angelic agency are not natural causes.

Obviously, anyone committed to ontological naturalism must reject the explanatory propriety of appeals to supernatural agency.

Naturalism comes also in epistemological and methodological varieties. Methodological naturalism is a commitment to preferring appeal to natural causes over appeal to direct supernatural agency. A strong form of this thesis is that natural explanations (including promissory notes for explanations to be offered at some future date) are always to be preferred to supernatural ones and hence that appeal to supernatural agency is never explanatorily satisfactory.⁸ Naturalists can hardly maintain that the only way of gaining knowledge is by the scientific method. Anyone who took such a view would have to go on to believe either that mathematicians use the scientific method or that mathematics does not produce knowledge. They do, however, often maintain the weaker claim that it is the only reliable method of coming to know about the natural world. Such naturalists often present themselves as special friends of the scientific method, sometimes indeed as its chief champions.

Methodological naturalism also comes in a more modest variety, one that grants only a strong presumption in favor of appeal to natural causes in the attempt to understand the natural world. There is no reason for modest methodological naturalists to concede that they are less committed to the scientific method than are other naturalists.

2. The Scientific Method

Before offering an account of how science explains things, it will be helpful to distinguish the kinds of thing that science explains. For our purposes, the following taxonomy should be adequate.

First, science explains the regularities observed in nature. For example, the motion of the planets are explained (or at least described in a generalized form) by Kepler's Laws which in turn are explained by Newtonian mechanics. The facts about chemical combination are explained (or described) by the quantitative laws of chemical combination discovered at the end of the seventeenth and the beginning of the eighteenth centuries. These laws were, in turn, explained by Dalton's Atomic Theory.

Second, science explains the origins of things.⁹ Usually, what is explained is a pattern of diversity (similarity and difference) or complexity. For example, the similarities and differences among Spanish, French, Romanian, and certain other European languages is explained by the differential modification of a common (Latin) tongue in different parts of the old Latin speech area. Similarly, the similarities and differences among Irish, German, Lithuanian, Greek, and Hindi (among other languages) are explained by their common descent (with differential modification) from an hypothesized Proto-Indo-European language. Charles Darwin explained the diversity of coral atolls by proposing a sequence of development of which each type of atoll represented a distinct stage.¹⁰

Finally, science sometimes explains singular events or structures. For example, a panel of scientists was convened to explain the *Challenger* disaster. The existence of the Grand Canyon is explained as the result of millennia of erosion by the Colorado River.

What is the scientific method? How do scientists explain these natural phenomena? The method practiced by contemporary scientists is fundamentally a two-step process.

The first step is construction of an argument to the best explanation. Beginning with some facts of observation, scientists advance explanations (or theories) that meet certain criteria of minimal adequacy. The threshold of minimal adequacy is, of course, imprecise and varies from scientist to scientist. A scientist who believes that all the proffered explanations of a puzzling phenomenon are bad will

simply consider the phenomena to be unexplained.¹¹ If there are one or more good explanations, the best of them would be accepted as probably true.¹² Schematically,

Some natural phenomenon is observed.

A certain explanation (theory) is both minimally adequate and explains the phenomenon better than any alternative explanation.

So, the explanation is (probably) true.

The details of the criterion of goodness—or at least the proper formulation of the criterion—are matters of controversy among contemporary scientists and philosophers of science. Sir Karl Popper emphasizes the theory's having withstood severe empirical tests.¹³ Thomas Kuhn emphasizes an array of criteria—internal consistency, coherence, external consistency, scope, accuracy, simplicity, and fertility.¹⁴ The details of these differences, and the extent to which each is right, need not detain us here.

The second essential feature of the scientific method is the attempt to improve the acceptability of the putatively best explanation. Again different authors emphasize different aspects of this attempt. Popper points out that explanations gain acceptance to the extent that they are able to withstand serious attempts to falsify them. Kuhn emphasizes the improvement of their scope and accuracy by solutions to outstanding anomalies.

It is because theories like the atomic theory of matter and the biological theory of evolution are believed by scientists to be both (non-comparatively) good explanations and (comparatively) better explanations than any alternative, that they are widely accepted.

3. *Explanation by Appeal to Supernatural Agency*

For some phenomena, explanation by appeal to scientific theory is easy and (relatively) obvious—the sky is blue because the atmosphere scatters blue sunlight, causing it to reach our eyes from all directions. For other phenomena, such explanation continues to be a problem. The source of the energy emitted by quasars is a good example. Some events seem quite beyond the possibility of scientific explanation. The fire that did not burn the village in Madagascar seems to be such a case. Various experts in meteorology and fire-fighting seemed to concur in this judgment.

It seems to be somewhat of a commonplace in discussions of science and religion to claim that although science subjects proposed explanations to rigorous testing, Christian appeals to supernatural agency are made on a “take it or leave it” basis. They may be based on faith, but they are not based on argument. Sheldon F. Gottlieb, in a response to David Berlinski’s critique of evolution, wrote:

In the world of the supernatural, anything goes, and the only limitation is the extent of one’s imagination. No evidence is required to substantiate any claims.¹⁵

Similarly, Marvin Mueller wrote that if appeal to supernatural agency is made, “all scientific discussion and all rational discourse must perforce cease.”¹⁶ That in fact is not the case. To show that, I will examine the theology and the institutional practice of the Catholic Church.¹⁷

Argument for supernatural agency can be made at two levels. One level uses the necessity of such an appeal either as evidence for the existence of God¹⁸ or at least as evidence for the authority of a particular message.¹⁹ The second level assumes that supernatural agency is possible and asks how one determines whether such intervention actually occurred in a particular case? Here, I will focus on the second level and look at the generic similarity with and specific difference from the scientific method.

First, however, we must distinguish various kinds of things that need to be explained. As in the case of scientific explanation, there are three types. Since not all types are explained by appeal to supernatural *interventionary* agency, not all will be relevant to the interests of this paper.

Some philosophers and scientists have appealed to theological principles to explain certain regularities of nature or general features of the natural world. René Descartes did so on behalf of conservation of motion.²⁰ Pierre Louis Moreau de Maupertuis did so on behalf of the law of least action.²¹ Theological arguments based on the anthropic principle provide a modern example.²² Whether such explanations are good ones is an interesting question. Such divine agency, however, is creative or conservatory. It is different from the kind of intervention that I am taking as my topic. So, this type of explanandum will not be discussed here.

The doctrine of creation is surely an explanation of the origin of things. It is not, however, by its nature, a case of interventionary agency. The doctrine of creation is designed to explain how it is that there is a natural world at all, not to provide the principles by which the world was transformed (if it was) from an initial state to the present one. Nevertheless, there are some Christians who attempt to interpret the doctrine of creation as a case of interventionary agency. We will return to this matter below.

However, the third kind of object of explanation, particular events, provides a clear case of explanation by appeal to interventionary divine agency. This type includes putative miracles, mystical phenomena such as apparitions, and demonic possession. Here are some cases:

CASE # 1

The Cure of Mother Marie Bernard

(San Francisco, U.S.A., 1951)

A Sacred Heart missionary in Japan, Mother Marie Bernard, aged sixty, . . . developed a lump in her neck and was sent for

treatment to St. Joseph's Hospital in San Francisco in 1951 after a biopsy showed that the lump was malignant. Surgery disclosed that the malignancy was too large to remove and too advanced for more than palliative treatment. . . . Their prognosis: she had six months, at most two years, to live. Meanwhile the sisters offered a novena of prayers to Philippine Duchesne, asking for a cure. [Philippine Duchesne (1769–1852) was a French nun who came to Missouri with four other Sisters of the Society of the Sacred Heart and became a pioneer leader in Catholic education and social work.] . . . Apparently the prayers worked. She returned to Japan and by 1960, when the process [of canonization of Philippine Duchesne] was initiated, the cancer had disappeared.²³

C A S E # 2

The Multiplication of Rice

(Ribera del Fresno, Spain, 1949)

On January 25, 1949, at the parish church in Ribera de Fresno a volunteer was preparing a Sunday meal for the poor of the parish. Realizing that she only had three cups of rice, not nearly enough food to feed the number of people expected, she prayed to Bl. Juan Macías, a Dominican lay brother, born in the village in 1585, whose holy life in a Peruvian convent had led to his beatification in 1837. To her astonishment, and that of those working with her, the pot of rice continued to boil for about four hours, producing enough food for about 150 people.²⁴

C A S E # 3

The Apparition of Our Lady

(Guadalupe, Mexico, 1531)

On the ninth of December, 1531, ten years after the conquest of Mexico, the Most Holy Mother of God appeared to Juan Diego, an Indian neophyte, on the rocky slope of Tepey-

ac. She came as a native princess; she asked that a church be built there. . . . Four times she spoke with the Indian, and on the twelfth of December she confirmed the truth of her visitation. On the *tilma* of Juan Diego which had carried the roses [which he had picked on the hilltop in the middle of winter] to the Bishop of Mexico, Fray Juan de Zumárraga, there miraculously flowered the beautiful image that has since been venerated under the title of Our Lady of Guadalupe.²⁵

How are those events to be explained?

The events represent a problem for ontological and strong methodological naturalists. Such naturalists seem to have three options.

First, they could deny that the event occurred at all—*denial of the fact*. On the advice of David Hume,²⁶ they could simply refuse to believe the reports. Perhaps the witnesses were perpetrators of a fraud. Perhaps they were merely the victims of one. This will not always work. Self-described atheist and materialist Michel Agnellet in his book *Cent ans de miracles à Lourdes* writes:

I was soon convinced that any idea of rejecting outright the “miracles” of Lourdes must be abandoned. To reject them would be to reveal an attitude of mind that might seem satisfactory in itself but would be incompatible with a strict regard for truth.²⁷

Second, they could deny that the fact occurred as it was reported—*ignorance of the details*. They could, for example, challenge the competence of the physicians who made the diagnoses in putative cases of miraculous cures.

Third, they could claim that we do not know enough about nature to know how such an event could result from purely natural causes—*ignorance of the law*. Agnellet, after describing some twenty

cures, most of which have been officially recognized as miraculous by the Church, concludes merely, “Lourdes remains a giant question mark in the scientific mind.”²⁸

Sometimes, of course, one or another of these options is the most rational one to choose. Not all amazing cures are miracles. Some putative apparitions are merely dreams. Some reports of marvelous occurrences just are not true. But sometimes none of these alternatives is plausible. In the search for explanations, however, the Christian has another option—supernatural intervention. The concepts of supernatural intervention in the natural order and miracle must be distinguished. T. G. Pater defines a miracle as an “extraordinary event, perceptible to the senses, produced by God in a religious context as a sign of the supernatural.”²⁹ A motorist prays for a safe journey. God answers the prayer. The motorist arrives at his destination safely. Perhaps there was some suspension of the laws of nature; perhaps not. But there was no extraordinary event; there was no miracle. Nor must all miracles be interventions in violation of the laws of nature. Strict constructions of Pater’s definition limit “extraordinary events” to those either beyond the power of any creature³⁰ or at least beyond the powers of corporeal creatures.³¹ But the phrase “extraordinary events” can be interpreted more widely, so as to include also certain events that are not strictly beyond the powers of corporeal nature, provided that they are sufficiently striking to qualify as a supernatural sign.³² The “Red Sea” does periodically dry up in a way that allows a land crossing. Perhaps God dried it up specially (i.e., via suspension of the laws of nature) to allow Moses to lead the people of Israel out of Egypt. Or perhaps He merely told Moses when to leave in order to reach the crossing point at the proper time. Whatever might be said about the wide view of miracles, however, some miracles clearly are beyond the power of any corporeal nature—the miracle at the wedding feast at Cana, the resurrection of Lazarus, and the Resurrection of Our Lord Himself. Belief in the real occurrence of many of these miracles, for the

Christian, comes with the acceptance of Scripture itself as the revealed word of God.³³

Christians can also apply the possibility of supernatural intervention to the explanation of non-Scriptural inexplicabilia. When they do, they do so in a way that resembles scientific explanation, at least to the extent of being an inference to the best explanation. They establish, first, that supernatural agency is a good explanation in the kind of case under consideration (i.e., that it meets some minimum criteria of adequacy) and, second, that it is the best explanation in the particular case. That makes theological reasoning in these matters generically similar to the scientific method.

Under what circumstances can supernatural agency be said to meet the minimum criteria of acceptability as an explanation? Although precise specification of the threshold is no more here to be had than in the science laboratory, a general list of criteria can be offered. Obviously God could do practically anything. So, nothing is implausible on account of being beyond God's power. An event can plausibly be attributed to supernatural intervention, however, only to the extent that it meets one or more of the following criteria:

- (1) it seems consistent with divine wisdom and providence,
- (2) it was the object of prayer, and
- (3) it is the kind of intervention for which there is precedent in Scripture and tradition.

Some inexplicable events will clearly fail the criteria. Consider this:

[A] Mr. George D. Bryson was making a business trip . . . from St. Louis to New York. Since this involved weekend travel and he was in no hurry . . . he asked the conductor, after he had boarded the train, whether he might have a stopover in Louisville. This was possible, and on arrival at Louisville he inquired at the station for the leading hotel. He accordingly

went to the Brown Hotel and registered. And then, just as a lark, he stepped up to the mail desk and asked if there was any mail for him. The girl calmly handed him a letter addressed to a “Mr. George D. Bryson, Room 307,” that being the number of the room to which he had just been assigned. It turned out that the preceding resident of Room 307 was another George D. Bryson.³⁴

Although no one can say with certainty that supernatural agency was not involved, there is no reason to believe that the coincidence was providentially arranged, nor that it was prayed for, nor that it is the kind of thing that God takes nature out of its way to bring about. Other events obviously pass, as do the case of the village fire, the cure of Mother Marie Bernard, the multiplication of rice at Ribera del Fresno, and the apparition at Tepeyac.

But meeting these criteria is generally rather easy. There are many things that are consistent with divine providence, including the suffering of the righteous. Many people offer general prayers for safety on the roads, recovery of the ill, peace and prosperity for the nation, and the conversion of sinners. It is hard to imagine a real good that goes unprayed for. Fulfillment of petitions made in prayer is surely the kind of intervention for which precedent can be found in Tradition and Scripture. Confidence in the claim that supernatural agency (and in particular supernatural intervention) is the best explanation depends also on such agency being better than any other explanation.

Often, natural explanations will be equally plausible. Here are two cases.

In the afternoon [of March 1 in the town of Beatrice, Nebraska] the Reverend Walter Klempel had gone to the West Side Baptist Church to get things ready for choir practice. He lit the furnace [and went home for dinner]. Most of the singers were in the habit of arriving around 7:15. . . . At 7:25, with a roar heard in almost every corner of Beatrice, the West Side Bap-

tist Church blew up. . . . But because of such matters as a soiled dress, a catnap, an unfinished letter, a geometry problem and a stalled car, all of the members of the choir were late—something which had never occurred before.³⁵

Or this:

Up to the age of forty-two he [sc. Pompey] had been uniformly successful; nothing he tried to do failed. After the age of forty-two he had been uniformly unsuccessful; nothing he tried to do succeeded. What happened at the age of forty-two? What circumstance took place . . . that might “explain” this? . . . [In 64 BC] Pompey is in Jerusalem, curious about the queer religion of the Jews. . . . He was told that there was an innermost chamber in the Temple, the Holy of Holies, behind a veil. No one could ever go beyond the veil but the high priest. . . . Some people said that the Jews secretly worshipped an ass’s head there, but of course, the Jews themselves maintained that only the invisible presence of god was in that chamber. Pompey, unimpressed by superstition, decided that there was only one way of finding out. . . . So he entered the Holy of Holies.³⁶

Each of these events passes the minimum plausibility requirement. That the members of the choir not die when the church exploded, while not required by the doctrine of providence, certainly seems like the kind of thing God might want to have happen. Probably no one at the West Side Baptist Church ever explicitly prayed that the choir not all die in a church explosion, there can hardly not have been general prayers for the well-being of the congregation. And the protection of God-fearing people from disaster is surely well-precedented.

Similarly, the punishment of Pompey’s sacrilegious visit to the Holy of Holies is both consistent with divine providence and the kind of thing for which precedent can be found. Was it prayed for? Per-

haps the outraged temple priests did pray that the deed not go unpunished. It is also the kind of act that might be subsumed under various passages in *Psalms*.

“The Beatrice choir members,” the *Life* report concluded, “[began] wondering at exactly what point it is that one can say ‘This is an act of God.’” Asimov tells the story of Pompey’s sacrilege and subsequent demise precisely in order to raise the question of whether he [Asimov], despite his naturalism, should have to concede that the subsequent misfortune was a case of supernatural agency. He denies that he must offer any explanation at all. Some things just happen. Asimov is, of course, right at least in this. One does not need supernatural agency to explain the string of disasters that befell Pompey. Nor does one need it to explain the choir’s narrow escape. In neither case is there any clear suspension of the laws of nature. These are, in that respect, different from the clear cases cited above. Each is very unlikely, but no more impossible than George Bryson’s curious experience. To the extent that no suspension of the laws of nature is required, the “explanation” of coincidence is a sufficiently serious competitor to prevent a strong claim in favor of supernatural agency.

A Christian might object with respect to the choir case: “But isn’t providential *intervention* on behalf of good people exactly what we expect from God? We don’t expect Him to arrange weird coincidences. That’s why it makes no sense to attribute Bryson’s case to providence. But it is a bit impious to deny that the protection of the choir was an act of providence.” To that the reply is as follows: The question is not whether the choir’s not dying in the explosion was part of what God wanted to happen. The question is whether He had to suspend the laws of nature to accomplish this. Perhaps, for ordinary mechanical reasons (“by chance” in Aristotle’s sense) one of the girls’ cars didn’t start that evening, etc. Perhaps God would have intervened if He had had to, but He didn’t have to. The incident could have been a miracle in which the laws of nature were suspended; it is not indubitable that it was such a case.

Application of the considerations elaborated above can be seen in the institutional proceedings of the Catholic Church.³⁷ That God answers prayers is, of course, an article of faith. My parish invites parishioners to list answered prayers in a notebook kept outside the chapel of perpetual adoration. No attempt is made to identify whether the answers to those prayers involved any suspension of the laws of nature. But there are contexts in which such an attempt is made.

The Church's practice of compiling a list (canon) of saints is focused on finding people who can be held up to the faithful both as inspiring models (for their lives of heroic virtue or their martyrdom) and as powerful intercessors.³⁸ Hence, the process of canonization requires both an account of the holy life and well-authenticated miracles. In these cases, miracle claims are carefully investigated before the conclusion is drawn that a miracle occurred as a result of intercession by the Servant of God being considered for canonization.

The most common kind of miracle officially recognized by the Church is the cure of an illness. Nearly half of the miracles of Christ reported in the Gospels are miraculous cures. But the Church's preference for this kind of case is perhaps driven by a more practical concern—facility of recognition. The signs of a miraculous cure were given a more or less definitive formulation by Prospero Lambertini (later Benedict XIV) in the eighteenth century:

In order for the cure of an illness or infirmity to be considered a miracle, a number of features must be present: (1) that the illness be serious and that it be either impossible or difficult to cure, (2) that the illness which is cured is not in a final stage shortly after which recovery should occur, (3) that no medications were applied, or, if any were, that it is certain that they did not work, (4) that the cure be sudden and instantaneous, (5) that the healing be complete, not imperfect or brief, (6) that it not be preceded by any noticeable improvement, and (7) that the disease not return.³⁹

These criteria are applied (in the case of beatifications and canonizations) by the *Consulta Medica*, a body of some sixty prominent Roman physicians established in 1948. From this body are drawn panels of five who meet to evaluate putative miracles.⁴⁰ Their job is merely to determine whether the cure can be explained by natural causes.

Some theologians, for example, Paolo Molinari, Postulator-General of the Society of Jesus, have expressed great interest in seeing other forms of miracles recognized in the causes of saints.⁴¹ Molinari attempted to secure ecclesiastical recognition of the intercession of Victoria Rasoamanarivo on behalf of the villagers. Fire experts he consulted agreed that the wind changes were inexplicable. But, as Woodward comments, “there was no precedent within the congregation [sc., for the Causes of the Saints] for creating a board of meteorologists and fire experts which could function like the *Consulta Medica*.” Molinari was more successful with the multiplication of food case mentioned above. It does not take a master chef to establish how much one can get from three cups of rice.

The final decision on whether what the panel judges to be naturally inexplicable is in fact a miracle is, of course, a theological matter. The case is thus turned over to theological consultants before being sent to the pope for final determination.⁴²

In terms of the schema elaborated above, the Church’s proceedings might be understood as follows. The fact that prayer to a deceased person of undoubted holiness⁴³ is followed by the occurrence of the event prayed for establishes at least a minimal degree of plausibility that a miracle was performed.⁴⁴ The conclusion that this is a case of supernatural agency becomes well-grounded, however, only to the extent that the possibility of alternative (including natural) agency can definitively be ruled out.⁴⁵ Residents of Kaufbeuren, Germany, prayed to Bl. Maria Crescentia Höss, a seventeenth-century Franciscan nun, to intercede for their (and her) city during a World War II air raid when it seemed in imminent danger of destruction. In

the words of one witness, "From below one could see with bare eyes the bombs hanging from the planes. But no bomb fell. Nothing happened. Kaufbeuren was spared." Interviews with experts, including some of the airmen who carried out the bombing raid, were conducted. The result, according to the vice-postulator: "The experts tell us that it can be explained by natural causes and so it is no longer under consideration."⁴⁶

The Church does not, in the same way, commit itself to the authenticity of visions such as that had by Bl. Juan Diego at Tepeyac. Nevertheless, there are two reasons why it has gone some way to formalizing evaluation procedures in such cases. First, confessors and spiritual directors must give guidance to individual Christians who report such visions. Second, sometimes such visions evoke great interest among Christians who did not themselves experience the vision. Many Catholics are interested in visiting the place and hearing the testimony of the visionaries. Should the Church encourage attention to the vision and the message? Should it tolerate it? Or should it forbid it? While no Catholic is required to believe in the authenticity of the vision at Tepeyac (or any other apparition),⁴⁷ the Church encourages respect for it to the extent that its anniversary is a feast day in the United States. On the other hand, Bishop John Mogavero of Brooklyn forbade Catholics from giving credence to the alleged visions that occurred in Bayside during the 1980s.⁴⁸

Is a real apparition of Our Lady the best explanation of what happened to Juan Diego? The Church's judgment with respect to an alleged apparition is not based exclusively on faith; it is also based, in part on reason. Karl Rahner summarizes this point as follows:

Where the supernatural, divine origin of a vision is alleged, this claim must be proved, not presumed. According to all the principles of theology the burden of proof rests upon him who affirms a thesis, not upon him who doubts or denies it.⁴⁹

Various attempts have been made to lay down principles for the discernment of spirits. A necessary condition for the recognition of the supernatural origin of visions or apparitions has been that there is no other explanation. Rahner writes:

Hence so long as a particular apparition can be explained in natural terms according to a reasonably probable, though hypothetical, general theory of visions, its supernatural character cannot be considered to have been established.⁵⁰

This is by no means a new point. Bl. Jean Gerson, Chancellor of the University of Paris, made the same point in the fifteenth century:

Since the judgment of the intellect is affected by an injured brain, and anyone who has been thus injured is subject to strange fancies, we do not have to inquire further to discover from what spirit those neurotic and illusory visions come.⁵¹

It is not, however, sufficient that no natural explanation of the apparition be evident. One could be confident that the object of the vision was really an angel or saint only when certain other conditions were met. Gerson summarizes his account as follows:

That the coin of divine revelation must be tested to see if it has the weight of humility, without idle curiosity or pride; to see if it has the flexibility of discretion, without superstition or a mind indocile toward advice; to see if it has the durability of patience in adverse circumstances, without murmuring or rebellion; to see if it has the perfect image of truth, without one false or incorrect assertion; and to see if it has the sparkling and genuine color of divine charity, without any of the dross or dregs of lust.⁵²

Obviously, as in much else in human life, application of these criteria requires good judgment, not skill in measurement. Theologi-

cal reasoning about the authenticity of a particular miracle or vision is thus generically similar to argument using the scientific method.⁵³ It is, however, specifically different. The second step of the scientific method as summarized above is the attempt to improve the quality of the proffered explanation. Argument to the best explanation is only a form of *probable* reasoning. It is always possible that there are better explanations, ones that have all the success that the accepted explanation does, but that also succeed in the hitherto unsuspected areas where the accepted theory fails. Scientists continue to test their theory by attempting to extend its scope or show that it holds true at new levels of precision. Scientific method includes, in other words, a procedure for identifying and correcting appeals to the wrong natural agency and even for improving imperfect appeals to the right agency.

Unfortunately, this corrective procedure will not protect against erroneous appeals to supernatural agency. There are two reasons for this. The first, specific to the kind of case under consideration here (i.e., miracles and apparitions), is that the event being explained is a particular historical incident, not a general process. The second, of more general applicability, is that the explanation is made by appeal to the agency of a free being, not a law-like regularity. Experimental tests—praying for the patients in one hospital, with those in another hospital used as a control group, for example—need only be mentioned for their absurdity to be apparent. God is no more interested in being manipulated than are our friends, and He always knows what we are up to. This is an important methodological difference. It is not the difference between using reason and being irrational.

There is a tendency in Church practice to split an investigation of plausibility-generating considerations into chronologically distinct phases. Unless there is something very unusual about an incident, the question of supernatural agency will not even arise. Such

unusual features might thus be said to make supernatural agency preliminarily plausible. Following determination that there is not also a plausible natural explanation, there will be further consideration of whether there is, all things considered, good reasons to judge the case to be one of supernatural explanation. This final round of considerations might be interpreted as in some way analogous to the further investigation of a scientific theory. But the essential difference remains—scientific work is experimental and observational in a way that further consideration of the circumstances of a putative case of supernatural agency is not. Even for historical explanations based on appeal to natural agency, there are often ways to test the efficacy of the natural agents to which the phenomenon in question is attributed. That makes appeals to supernatural agency not an application of the scientific method. It does not, however, make such appeals non-rational or illicit.

4. The Christian Case for Modest Methodological Naturalism

The foregoing remarks put us into a better position to say what the strong presumption in favor of natural explanation that is the characteristic of modest methodological naturalism comes to. At the beginning of inquiry into a new problem area, the Christian inquirer always has the abstract possibility of direct intervention by a supernatural agent. There may be (as yet) no good natural explanation. The presumption of modest methodological naturalism is sufficiently strong to suggest, as the proper response to this situation, that there is probably a natural explanation that has just not been found. When and if inquiry turns up plausible natural explanations, the most reasonable thing to do would be to accept (tentatively) the most plausible. What overcomes the presumption that the event or process is the result of natural causes? Two things. First, the bare (and universally present) possibility of supernatural agency might be augmented by considerations of the kind mentioned above. Super-

natural agency in answer to prayer, for example, is not a “bare possibility.” For the Christian, it is the kind of thing that he knows to happen. Second, to the extent that something can be shown to be impossible in light of scientific theories that one has no good reason to abandon, supernatural agency begins to become a plausible (as opposed to a merely possible) alternative. Hence, the medical inquiry into the putatively miraculous cures.

Modest methodological naturalism has the signs of a good method for the intellectual project of understanding our world. A good method allows achievement of the goal at which it is aimed without either causing disproportionate collateral disruption of other important goals or encouraging bad habits in those using the method. Modest methodological naturalism does that. To put the point more concretely, modest methodological naturalism is entirely sufficient for the practice of science. At the same time it does not undermine the theologically most plausible claims for supernatural agency. Further, it discourages early resort to supernatural agency.

A secular case can be made for modest methodological naturalism along the following lines. The goal of natural science is to provide an account of how the natural world works, that is, explanations of how the natures (or structures) of things cause the natural phenomena we observe. Beginning inquiry with a strong presumption that all events in the natural world have natural causes encourages investigators to pursue natural explanations of even very peculiar phenomena, rather than to write them off as inexplicable on the basis of natural causes. The advantage of this is that explanations that appeal to natural causes can be followed up using the scientific method. That method, conscientiously applied, gives us a good prospect of recognizing the inadequacies of wrong explanations. Appeals to supernatural causes, by contrast, cannot be followed up in the same way, for reasons that were stated above.

Beginning inquiry with only a presumption that all events in the natural world have natural causes is sufficient to attain the objective of science. That objective is to give an account of the natures of things, not to explain everything that happens to natural objects. Whether all events are completely determined by law is a philosophical position that is held by some, but denied by others. Aristotle and C. S. Peirce denied it for reasons that have nothing to do with religious belief.⁵⁴ Christians deny it because it is inconsistent with revelation. The natural scientist, as such, need not commit himself on this matter. Acceptance of the merely presumptive character of the claim that natural events have natural causes helps keep natural science free of the anti-theistic polemics with which it is sometimes entangled.

Modest methodological naturalism, that is to say, is the best method for any investigator, independent of his theological or metaphysical commitments. It gives science all the room that it needs to pursue its inquiry into the relationship between natural phenomena and the natural powers that cause them without confusing scientific and philosophical matters.

A popular view of the relation between the scientific method and methodological naturalism stands the relation on its head. Mueller, for example, says that “scientific method is absolutely and essentially based on naturalistic explanations.”⁵⁵ More accurate would be the claim that the scientific method is *limited to* (checking) such explanations. The words “based on” suggest (incorrectly) that it presupposes (or will not work unless) all events have natural explanations. Mueller goes on to say that “*scientific* investigators eschew any paranormal or supernatural explanation.”⁵⁶ That they cannot use their method on other explanations is true enough. But contrary to what Mueller seems to suggest, there is no reason why scientific investigators *as investigators* should reject supernatural explanations on principle.

A Christian case for modest methodological naturalism would depend, by its very nature, on the facts of revelation. The relevant Christian considerations are that God does act in the world, but that He generally accomplishes His will through secondary causes. (Why else make secondary causes in the first place?) The fact that the preference for natural explanations is merely presumptive gives adequate room for appeal to supernatural agency in the case of well-evidenced inexplicabilia.

With reference to the sign cited above, modest methodological naturalism allows the practice of science without risk of damage to the collateral projects of understanding God's relation to the world and praying, even for miracles.

Furthermore, it does so without giving any encouragement to the bad habit of premature resort to supernatural agency. It cautions against, for example, Isaac Newton's suggestion to Richard Bentley that intelligent design was the only possible explanation for the structure of the solar system (and hence was evidence for the existence of God).⁵⁷ It cautions as well against William Paley's appeal to direct supernatural agency in the origin of plants and animals that are marvelously adapted to their environments.⁵⁸ In the first instance, Pierre-Simon Laplace was able to offer a plausible natural account for the origin of the solar system.⁵⁹ In the second, Charles Darwin was able to show that there were other ways of explaining adaptation.⁶⁰ The scandal that such appeals caused was well characterized by Stephen Toulmin, who wrote:

From the year 1700 on, religious-minded men in the Protestant world . . . had always hoped and expected that the new science would eventually confirm and reinforce the fundamental doctrines of Christianity; and they were correspondingly ready to see in their observations of Nature evidences of "wisdom," "foresight," and "design." . . . All the hitherto unsolved problems of geology, astronomy, physiology and natural history were presented as demonstrating that the world of

Nature had been created as we now find it “by the Counsel of an intelligent Agent.” . . . The result of this enthusiasm for the teleological argument from design was to give a hundred hostages to fortune; and as the physical and biological sciences succeeded in explaining the supposedly supernatural *inexplicabilia*, all of these hostages in turn had to be ransomed, one after another.⁶¹

The latest manifestation of this bad habit is Christian attacks on theories of evolution.⁶² In addition to the claim that such theories contradict Scripture, two versions of that attack can be distinguished. Each is an attempt to deploy argument to the best explanation against some particular evolutionary theory.

One version has it that there is good scientific (i.e., observational and experimental) evidence of a recently created earth, separate creation of each kind of living thing, etc. This line of reasoning has been advanced by Henry Morris⁶³ and others in a project they call “creation science.” The many problems that this research program has, both in developing its own evidence and in understanding evolutionary theories well enough to offer a serious critique of them, have been well-canvassed elsewhere.⁶⁴

Another version, advanced by Philip Johnson, Alvin Plantinga, and others⁶⁵ combines a critique of evolutionary biology and of the prospects for a chemical-evolutionary theory of the origins of life with a reminder that the alternative of direct creation of life and of major kinds of living things (sc., by a supernatural intervention that suspends the laws of nature) is always available (at least to theists) as an alternative. These authors have defended such appeals, in part, by analogy to the occurrence of miracles.⁶⁶ In fact, appeal to supernatural agency to explain the origins of species and of life on earth is different in significant respects from the appeals to supernatural agency in the cases of miracles and apparitions treated above.

The problem about appeal to supernatural agency is that divine omnipotence makes direct supernatural agency (practically) always

a possibility. If no more than mere possibility is sufficient to make appeal to supernatural intervention plausible, then such intervention will be the view to adopt (on the basis of argument to the best explanation) *every* time we find something that we cannot (yet) explain by natural agency. For in those cases it will be more plausible than *all* rival explanations. Plantinga writes:

If you are a Christian, or a theist of some other kind, you have a ready answer to the question, how did it all happen? . . . The answer, of course, is that they have been created by the Lord.⁶⁷

Such answers, however, are too “ready.” The fact that there is no generally accepted natural explanation of the source from which quasars get their energy does not make direct creation of the energy by God the best explanation. Johnson writes:

Occasionally, a scientist . . . will suggest that perhaps supernatural creation is a tenable hypothesis in this one instance. Sophisticated naturalists instantly recoil in horror, because they know that there is no way to tell God when He has to stop.⁶⁸

One might add that modest methodological naturalists react with concern because they know that there is no way to tell eager appealers to supernatural agency where they have to stop.

In the case of miracles, there are several things that make supernatural agency not just a minimally plausible but a good explanation. There is clear Scriptural evidence that God does perform miracles. In addition, there is prayer for the event in question, and Scriptural evidence that God performs miracles precisely in response to requests for help. In addition, in the cases mentioned, the phenomena—the disease in question, the cooking of rice—are well understood. There is no question of whether some rare strain of rice or some unusual cooking technique is responsible for the miracle. For

apparitions, too, precedent can be found—at Mount Tabor and on the road to Damascus.⁶⁹

In the case of origins theories, by contrast, the matter is very different. We know rather less about the limits of changing gene ratios, possible chemical pathways to living cells, and so on. In addition, although Scripture is explicit about God's creation of the world and His providential care for it, including special providence to cover the needs of individuals and communities, it does not give us good reason to believe that He suspends the laws of nature in order to keep His (non-human) creation on the track He intends for it. To the extent that one can make a judgment about such things, it would seem more consonant with God's wisdom and providence to think that He could and did create a world of secondary natures that could and did do His will. In other words, that He created a world that developed in the way in which He intended without His continually having to make adjustments. In His personal interaction with rational beings, who are both free and special objects of God's concern, interventions in ways that suspend the laws of nature seem entirely proper. They seem odd elsewhere.

5. The Complementarity of Natural and Supernatural Spheres of Interest

The prospects for conflict between science and religion have been exaggerated, particularly by partisans of the Draper-White "warfare" thesis in the historiography of science and religion.⁷⁰ Equally erroneous, however, is the assertion that there is no possibility of conflict between the two. Science and religion do, after all, both make claims about the physical world in which we live. This is especially true when the term "science" is extended to refer to all that we know about the world on the basis of reason and observation. Nevertheless, the points made here about the proper place of appeals to supernatural agency reveal significant limitations on the likelihood of

conflict. For situations in which appeal to supernatural agency is theologically most plausible are situations that are of least interest to scientists, and the situations of most interest to scientists are situations in which appeals to supernatural agency are theologically least compelling.

Theologically, the most plausible cases of supernatural intervention in the natural order are the claims about miracles and mystical experiences. These are claims about particular events. Apart from the central miracles reported in Scripture, whether the events really were miraculous has little theoretical significance either for theology or for science.

With respect to theology, inattention to apparition and miracle claims (apart from those mentioned in Scripture) will not undermine one's spiritual life. Miracles are, generally, for the benefit of particular individuals. Apparitions are generally for the private good of the visionary. Even those that are not—prophetic visions—never contain new knowledge necessary to anyone's salvation.

Extreme naturalists sometimes talk as though any supernatural intervention in the order of nature is a threat to science. Richard C. Lewontin writes:

Whatever the desire to reconcile science and religion may be, there is no escape from the fundamental contradiction between evolution and creationism. They are irreconcilable world views. Either the world of phenomena is a consequence of the regular operation of repeatable causes and their repeatable effects . . . or else at every instant all physical regularities may be ruptured and a totally unforeseeable set of events may occur. One must take sides on the issue of whether the sun is sure to rise tomorrow. We cannot live simultaneously in a world of natural causation and of miracles, for if one miracle can occur, then there is no limit.⁷¹

In fact, the occurrence of miracles would only interfere with the possibility of doing science if miracles were so frequent and so capri-

cious as to undermine the regularity of natural substances acting in accordance with their natures. Scientists do not need to worry about explaining the multiplication of food at Ribera del Fresno nor the inexplicable healing of Mother Marie Bernard. The responsibility of science is to explain how nature works, that is, to give an account of natures and their powers or of complex objects and the structures that make their operations possible. It is not the responsibility of science to explain everything that happens in the natural order, at least not if some things that happen there are not the result of the actions of natural objects. The occurrence of miracles is no threat to the possibility of doing science.

Much less well-motivated, from the theological point of view, are appeals to supernatural intervention to explain the historical development or present state of the natural world.

Revelation does have some things to say about origins. Christians differ as to what exactly those things are. The Catholic Church teaches only two. One is that the universe had a first moment of existence.⁷² Another is the monogenetic origins of mankind (i.e., the existence of a first couple).⁷³ (Plantinga, working out of the Calvinist theological tradition, puts the same two propositions on the top of his list of what it is most probable that the *Genesis* protohistory teaches.⁷⁴) I agree with Plantinga when he says that “what we really need are answers to our questions from the perspective of *all* that we know.”⁷⁵ Since these two propositions are contained in revelation, Christians should believe them despite any (merely) probable arguments that science might mount to the contrary.

The relation between these propositions and current science, however, does not look anything like the relation that many (including Plantinga and Johnson) see between Christianity and evolutionary theories (in particular, macroevolution and theories about the origins of life).

The best current cosmogonic theory—the big bang theory—has seemed to many Christians to be very congenial given their com-

mitment to a non-eternal universe. Many (both Christian and secular) have thought that one of the theories popular in the fifties—Fred Hoyle’s steady state theory—implied that the universe was infinitely old.⁷⁶ But the eternity of the world is a philosophical gloss on the steady state theory, not a part of its scientific content. The theory itself presents us with nothing more than a world with, to use James Hutton’s phrase, “no vestige of a beginning,—no prospect of an end.”⁷⁷ Whether it had been operating forever or was created in its steady state at some indeterminable point in the past is not a question the scientific method can answer. Creation in time requires supernatural agency, but it does not require supernatural intervention—there would at the moment of the creation of the universe have been nothing in which to intervene.

Monogenesis is not, *per se*, a belief about supernatural agency. If it should turn out to be impossible on the basis of the best scientific theory, the Christian would be faced with the alternatives of rejecting the scientific theory or appealing to supernatural agency. Although the antecedent probability, given our knowledge of genetics, would be in favor of an entire group of emergent human beings rather than a first couple that was ancestor of all subsequent human beings, this is not required by the laws of genetics. Whether, as some have suggested, there remain other scientific objections to monogenesis is a topic too complex for this paper.

There are two differences between these doctrines, on the one hand, and the rejection of macroevolution and the naturalistic proto-theories about the origins of life, on the other. First, these doctrines are not the conclusions of arguments to the best explanation. They are accepted on authority. There will thus be no problem here of natural and supernatural explanations competing for the title of “best explanation.” Second, there is no possibility in the first case, and, so it seems to me, no practical possibility in the second, that these doctrines will conflict with any future scientific explanation or with the conclusions of any line of scientific reasoning.

By contrast, appeals to supernatural intervention to account for such difficult problems as macroevolution and the origins of life are, as presented by Plantinga and Johnson, at least in part, supernatural explanations that do compete with the natural explanations that come from scientific work. Further, these appeals are both discouraged by modest methodological naturalism and theologically problematic. Supernatural agency can, as I suggested above, move from the category of bare possibility to the category of good explanation only by meeting one or more of three criteria. These appeals meet none.

That God should create life and various types of organisms is clearly not the object of prayer.

Nor is it the kind of thing for which particularly strong precedent can be found, either in Scripture or in Tradition. The case against citing miracles as precedent was made above. Plantinga cites, against his Catholic opponent, Ernan McMullin, the Catholic doctrine that God directly creates each human soul.⁷⁸ This doctrine will not, however, get Plantinga the kind of intervention that he needs. There are two important differences between the cases. The first is that human souls, unlike animals, are subsistent forms, that is, are capable of existence independent from matter. This, according to St. Thomas, makes direct creation by God a metaphysical requirement. The emergence of new animal species is not similarly metaphysically special. The second difference is between the place of individual human beings and that of animal species in divine providence. Every individual human being is created for the purpose of sharing in the Beatific Vision. So, while the direct creation of human souls does represent a divine productive act with a direct impact on the order of nature, it is too different from intervention in the history of life to serve as a good precedent for such intervention.

On the Thomistic philosophy of nature, human souls were, like all forms (substantial and accidental) created by non-material beings and infused in properly disposed matter as needed. Human souls were different in that, being subsistent forms, they had to be creat-

ed by God. Non-subsistent forms, by contrast, could be made by creatures, but not by material creatures. This philosophy of nature posits much more interaction with “the outside” than does the currently popular view, but even here, the interaction is regular. Creation of the human soul is very much like production of any other form.⁷⁹ What this view does not include is the kind of extraordinary supernatural intervention that moves matter about in a way independent of any of the natures of the things involved. It is intervention of that last type that Plantinga needs.

Does direct supernatural intervention at least meet the criterion of consistency with divine wisdom and providence? It is obviously consistent with divine providence that there be a world in which there are human beings. But that is not the issue. It is not so clear that direct intervention itself is consistent with divine wisdom. It would seem to be most consonant with divine wisdom that God create things that are capable of doing His will and then allow them to do it. By exercising their own causality, they do what creatures should do, namely, imitate divine causality. So unless it is impossible for living things to evolve from non-living things and present biological diversity to evolve from Darwin’s “one or a few first kinds,” theological considerations favor the view that the world got to be the way it is now through the operation of secondary causes. We will know whether that is in fact possible only by conducting scientific inquiry (and, more generally, inquiry in the spirit of modest methodological naturalism). Perhaps scientists will find a natural account. Perhaps they won’t. Perhaps there isn’t one because that’s not the way things happened. The doctrine of creation remains untouched whatever the outcome of the scientific inquiry. The details, however scientifically interesting they might be, are not theologically important.

Plantinga and Johnson are correct in saying that Christians do have a battle to fight against the naturalists.⁸⁰ The naturalists about whom they complain may be academically more respectable than the

creation scientists but they are capable of making mistakes just as egregious. William B. Provine, for example, writes:

[Darwin] understood immediately that if natural selection explained adaptations, and evolution by descent were true, then the argument from design was dead and all that went with it, namely the existence of a personal god, free will, life after death, immutable moral laws, and ultimate meaning in life.⁸¹

Many of these naturalists have made a valiant attempt to claim evolutionary biology (and chemical evolution as an account of the origin of life) as their own.

Johnson, however, goes wrong in his willingness to believe them about this. He writes:

Futuyma's doctrinaire naturalism is not just some superfluous philosophical addition to Darwinism [sc., the neo-Darwinian synthesis—p. 16] that can be discarded without affecting the real "science" of the matter. . . . If the possibility of an "outside" intervention is allowed in nature at any point, however, the whole naturalistic worldview quickly unravels.⁸²

Elsewhere he says that "Darwinists disagree with creationists as a matter of definition."⁸³ His general problem is that he fails to recognize how the distinction between creationists and (ontological) naturalists is related to the neo-Darwinian synthesis as he characterizes it.⁸⁴ The latter is a scientific theory, not a philosophical one. The fact that it attempts to explain macroevolution without appeal to miracles or supernatural intervention makes it no more naturalistic than, say, atomic theory, which also makes no such extraordinary appeal. One can be a creationist (in his, correct, sense of someone who believes that God created the world) and accept neo-Darwinism, or a creationist and oppose it. Naturalists have the same two options. Johnson seems to alternate between attacks on natu-

ralism and attacks on neo-Darwinism in a way that really does invite the reader to think that he is fighting one fight against a league of dangerous theories. In fact, he should be fighting to liberate a scientific theory from a gang of philosophical kidnappers.

Plantinga avoids the temptation to see naturalism and evolutionary theories as inextricably linked. He points out the importance of the “grand evolutionary story” to the naturalist worldview⁸⁵ and insists that science is not theologically neutral;⁸⁶ he also recognizes that evolutionary theories and Christianity are not logically contradictory.⁸⁷ He would do better, however, to leave the matter there. The reality of supernatural intervention in nature is an important theme in Christian theology, but the proper locus of that battle is over the reality of miracles. Whether God intervenes also to secure the origins of living things and of the human body is of some speculative interest, but of no real theological importance. I think the case for common ancestry is reasonably good and the case for the natural origins of life, still hopeful. Obviously Plantinga and others disagree. Christian anti-evolutionists should at least ask themselves whether their pursuit of this point, and in particular their pursuit of it in a way that entangles their theological principles in their critique of current scientific work⁸⁸—does more harm than good.

6. *Conclusion*

There are good pragmatic and theological reasons for preferring an appeal to natural causes in attempting to explain the events that we observe in the world around us, that is, for modest methodological naturalism. Contrary to what some Christians claim, its naturalism neither presupposes nor leads to deism or atheism. Contrary to what some atheists say, its openness to the possibility of supernatural agency as explanation does not require the abandonment of the scientific method, rationality, and all that is virtuous in intellectual inquiry. The account of modest methodological naturalism that I

have presented offers us a way to sort out claims of supernatural agency, a way whose argumentative structure is similar to that used in scientific inquiry. This version of modest methodological naturalism allows us to accept some claims of miracles and mystical phenomena, but judges rather more doubtful the strength of some recent arguments for supernatural agency as necessary to the explanation of the origins of life and of various biological taxa.

Notes

1. Etienne Fourcadier, *La vie héroïque de Victoire Rasoamanarivo* (Dillen, 1937).
2. Matthew 7:7–12; Luke 11:13.
3. If there is a distinct act of divine concurrence in the causal operations of natural objects, it can, for purposes of this paper, be included as an aspect of conservation.
4. It is, I suppose, a “law of nature” in the sense of a natural regularity that healthy human bodies carry out the ordinary commands of a person’s human will. In that sense of “law of nature” “preventing execution” would suspend a law of nature.
5. S. E. Donlon, “Miracle, Moral,” *The New Catholic Encyclopedia* (McGraw-Hill, 1967) 9: 884.
6. Interesting, but not relevant to the central thesis of this paper, is the question of whether Aristotelian essences or Thomistic subsistent substances (human souls) are natural or non-natural entities. Some self-described naturalists exclude such entities on principle, just as their seventeenth century predecessors excluded action at a distance. I suspect that such an exclusion represents an improper confusion of naturalism and mechanism.
7. Alan Lacey, for example, in his contribution to the recent *Oxford Companion to Philosophy* (Ted Honderich, ed. [Oxford, 1995], 604) defines naturalism as “the view . . . that the world of nature should form a single sphere without incursion from outside by souls or spirits, divine or human and without having to accommodate strange entities like non-natural values or substantive abstract universals.”
8. I will not speculate about whether, and if so under what circumstances, someone not committed to ontological naturalism might nevertheless find strong methodological naturalism appealing.
9. Some anti-evolutionists reject the possibility of scientific accounts of origins. Even defenders of the scientific status of such work recognize that it is different from other kinds of science. See Stephen Jay Gould, “Evolution and the Triumph of Homology, or Why History Matters” in *American Scientist* 74 (1986): 60–69.
10. *The Structure and Distribution of Coral Reefs* (1842).

11. Sherlock Holmes is wrong when he says, "When you have eliminated the impossible, whatever remains, however improbable, must be the truth." (A. Conan Doyle, *The Sign of Four*, ch. 6.) The problem is not with the disjunctive syllogism *per se*, of course. It is just that, as a practical matter, the disjunction is never exhaustive. Some recent Christian critics of evolutionary theory have suggested that naturalists are forced to accept evolutionary theories for lack of an alternative. That they do not have to do so is adequately shown by Michael Denton, *Evolution: A Theory in Crisis* (Burnet, 1985). Denton is both a non-theist and a critic of evolution.
12. Of course, the constitutionally weaker among modern scientists have caught the epistemological hypochondria that is epidemic in late twentieth-century America. Those for whom the word truth, even with a lower case *t* is taboo may substitute their favorite euphemism without loss of meaning.
13. *Conjectures & Refutations* (Routledge & Kegan Paul, 1963).
14. *The Structure of Scientific Revolutions* (University of Chicago Press, 1970).
15. Letter to the editor, *Commentary* 102:3 (September 1996), 13–14.
16. "The Shroud of Turin: A Critical Appraisal," *The Skeptical Inquirer* 6:3 (September 1982): 15–34, here 27.
17. I am interested in the norms laid down by the Church for judging such matters. I am not concerned with whether institutional practice always lives up to the standards set by the norms, any more than I am concerned with whether scientists live up to the standards set by the scientific method.
18. Richard Swinburne, *Is There a God?* (Oxford, 1996).
19. "Since these [sc., external proofs of God's revelation, i.e., divine deeds, and principally miracles and prophecies] clearly show forth God's omnipotence and infinite knowledge, they are signs of revelation that are most certain and suited to the intelligence of all men."—Vatican I, *Constitutio dogmatica de fide catholica*, 3 (Denziger 3009).
20. *Principles of Philosophy* (1644) II.36.
21. *Essai de cosmologie* (1750).
22. For two criticisms of such a natural theology, which seems to be more often suggested than elaborated, see Patrick A. Wilson, "Explaining a Finely Tuned Universe," *Christian Scholar's Review* 21:4 (June 1992): 408–15; Karl Giberson, "The Finely Tuned Universe: Handiwork of God or Scientific Mystery?" and Wilson, "Not God's Handiwork Either," *ibid.* 22:2 (December 1992): 187–98.
23. Kenneth L. Woodward, *Making Saints: How the Catholic Church Determines Who Becomes a Saint, Who Doesn't and Why* (Simon & Schuster, 1990), 203–5.
24. Summarized from an account in Dario Composta, *Il miracolo: Realtà o suggestione? Rassegna documentata di fatti straordinari nel cinquantennio 1920–1970* (Città nuova editrice, 1981), 133–41.

25. Sr. Simone Watson, O.S.B., *The Cult of our Lady of Guadalupe: A Historical Study* (Liturgical Press, 1964), 9.
26. *An Enquiry Concerning the Human Understanding* (1758), ch. 10.
27. Éditions de Trevisa, 1957. English translation, *I Accept These Facts* (Max Parrish, 1958).
28. *Ibid.*, 153.
29. "Miracles (Theology of)," *The New Catholic Encyclopedia* (McGraw-Hill, 1967) 9: 890–94, here 890.
30. St. Thomas Aquinas, *Summa Theologiae*, 1a, 105.6–8 and 110.4; *Summa Contra Gentiles* 3.101–3; and *De potentia Dei* 6.1–10.
31. Prospero Lambertini [Benedict XIV], *De servorum Dei beatificatione et beatorum canonizatione* (1734–38) 4.1.2.7–8.
32. In this regard, see Guy de Broglie, S.J., *Revelation and Reason* (Hawthorn, 1965), esp. 105–9, on translating the New Testament Greek *semeion* into Latin first as *signum*, then as *miraculum*.
33. Nevertheless, unless one can accept Scripture as revelation without reliance on the miracles that it reports, not all of them can come this way.
34. Warren Weaver, *Lady Luck: The Theory of Probability* (Dover, 1982), 282–83. In the interest of economy of space, I have omitted other amazing aspects of this coincidence.
35. George E. Deale, "Why the Choir Was Late," *Life*, 27 March 1950, 19–23.
36. Isaac Asimov, "Pompey and Circumstance," *The Magazine of Fantasy and Science Fiction* (May 1971). Reprinted in *The Left Hand of the Electron* (Doubleday, 1972), 172–85, here 184.
37. Since Catholic theology is usually worked out on the basis of Aristotelian philosophy, criteria of authenticity are usually stated in terms of arguments from signs. Such arguments are easily transformable into arguments to the best explanation.
38. *Catechism of the Catholic Church* (Libreria Editrice Vaticana, 1994), 828.
39. *Op. cit.*, 4.1.8.
40. Woodward, *op. cit.*, esp. 194–201.
41. *Ibid.*, esp. 207–14.
42. Woodward, *op. cit.*, 205–7.
43. An official decision that a Servant of God has led a life of heroic virtue (a declaration of venerability) always precedes official inquiries into possible miracles.
44. Not, of course, by the person prayed to, but through his or her intercession.
45. Also ruled out must be the possibility that the cure was due to the intervention of some other saint.
46. Woodward, *op. cit.*, 211–12.
47. "Such apparitions or revelations are neither approved nor condemned by the Apostolic See, but only permitted as piously to be believed with a merely human faith on

- the basis of tradition confirmed by suitable witnesses and documents.”—Pope St. Pius X, *Pascendi Dominici Gregis* (1907), 57, quoting a decree first issued by the Congregation of Rites on 12 May 1877 (*Acta Sanctae Sedis* 11: 509–11, here 510).
48. “Declaration Concerning the ‘Bayside Movement’,” 4 November 1986. For more on the rejection of apparition claims, see Bernard Billet, O.S.B., “Le fait des apparitions non reconnues par l’Église,” in *Vraies et fausses apparitions dans l’Église* (Lethielleux, 1973),
 49. *Visions and Prophecies* (Herder & Herder, 1963), 12. See also 81.
 50. *Ibid.*
 51. *De Probatione Spirituum* (1415), Refl. VII. This along with his earlier *De Distinctione Verarum Visionum a Falsis* (1400–1) is most accessible in Paschal Boland, O.S.B., *The Concept of Discretio Spirituum in John Gerson’s “De Probatione Spirituum” and “De Distinctione Verarum Visionum a Falsis”* (Catholic University of America Press, 1959), which contains both a translation and a commentary.
 52. *De distinctione*, 98. For modern accounts, see Rahner, *op. cit.*, ch. 3 “Some Criteria for Genuine Visions”; and Laurent Volken, *Visions, Revelations, and the Church* (Kenedy, 1963).
 53. Arguments for a case of demonic possession are different with respect to the conclusion. The Church never needs to commit itself to the claim that a particular case was definitely one of possession. Cases in which this is sufficiently plausible as an explanation provide sufficient reason for sending an exorcist. Again, the key to the argument is signs. Demonic possession would seem (given its theoretical possibility) to be the best explanation of certain phenomena.
 54. Aristotle, *Physics* II; C. S. Peirce, “The Doctrine of Necessity Examined,” *The Monist* 2 (1892): 321–37.
 55. *Op. cit.*, 31.
 56. *Ibid.* Emphasis in original.
 57. *Four Letters from Sir Isaac Newton to Doctor Bentley Containing Some Arguments in Proof of a Deity* (1756). Republished in I. Bernard Cohen, ed., *Isaac Newton’s Papers & Letters on Natural Philosophy* (Harvard, 1958).
 58. *Natural Theology; or Evidences of the Existence and Attributes of the Deity, Collected from the Appearances of Nature* (1802).
 59. *Exposition du système du monde* (1796), v. 6.
 60. *The Origin of Species* (1859).
 61. Stephen Toulmin, *The Return to Cosmology: Postmodern Science and the Theology of Nature* (University of California Press, 1982), 123.
 62. This habit is bad independent of whether the appeals to supernatural agency are used as part of an argument for the existence of God.
 63. *Scientific Creationism* (Creation Life Publishers, 1974).
 64. Laurie R. Godfrey, *Scientists Confront Creationism* (Norton, 1983) is one among many. Unfortunately, many of these critiques combine very good science with an under-

- standing of philosophical and theological issues that is as embarrassingly inadequate as is the scientific creationists' understanding of science.
65. Alvin Plantinga, "When Faith and Reason Clash: Evolution and the Bible," and "Evolution, Neutrality, and Antecedent Probability: A Reply to McMullin and Van Till," *Christian Scholar's Review* 21:1 (September 1991): 8–32 and 80–109. Philip Johnson, *Darwin on Trial* (Regnery Gateway, 1991); "Evolution as Dogma: The Establishment of Naturalism," *First Things* 6 (October 1990): 15–22; "Creator or Blind Watchmaker?" *Ibid.* (January 1993): 8–22.
 66. Plantinga, "Evolution," 100–1.
 67. "Clash," 18.
 68. "Evolution," 18.
 69. Matthew 17:1–8; Mark 9:2–13; Luke 9:28–36; Acts 9:1–19.
 70. J. W. Draper, *History of the Conflict between Religion & Science* (Appleton, 1875), and Andrew Dixon White, *History of the Warfare of Science with Theology in Christendom* (Appleton, 1896).
 71. "Introduction" in Godfrey, *op. cit.*, xxvi.
 72. "God . . . from the very beginning of time has created both orders of creatures in the same way out of nothing, the spiritual and angelic world and the corporeal or visible universe."—Lateran IV, *Constitutio de fide catolica* (Denziger 428)
 73. "There are . . . conjectures about polygenism which leave the faithful no such freedom of choice. Christians cannot lend their support to a theory which involves the existence, after Adam's time, of some earthly race of men, truly so called, who were not descended ultimately from him, or else supposes that Adam was the name given to some group of our primordial ancestors. It does not appear how such views can be reconciled with the doctrine of original sin, as this is guaranteed to us by Scripture and tradition, and proposed to us by the Church. Original sin is the result of a sin committed, in actual historical fact, by an individual man named Adam, and it is a quality native to us all, only because it has been handed down by descent from him."—Pius XII, *Humani Generis* (1950), 37.
 74. "Evolution," 80–81.
 75. "Clash," 30.
 76. Plantinga suggests this in "Clash," 13.
 77. *Theory of the Earth* (1795), Vol. I, 200.
 78. "Evolution," 101. The teaching is found most authoritatively in Pius XII, *Humani Generis*, 36.
 79. Philosophies of nature that abandon forms, leaving the human soul more starkly *sui generis* than it is for Thomists, will not provide Plantinga what he needs any more than does Thomism.
 80. Cf. Plantinga, "Clash," 16 and Johnson's *First Things* titles.
 81. "Response to Phillip Johnson," *First Things* 6 (October 1990), 23–24, here 23.
 82. "Evolution," 18.

83. "Evolution," 17.
84. "Evolution," 16.
85. "Clash," 17; "Evolution," 87ff.
86. "Clash," 16–17.
87. *Ibid.*, 21.
88. As Plantinga does, in his subtitle "Evolution and the Bible."