In Defense of Naturalism

Gregory W. Dawes

Department of Philosophy
University of Otago
Dunedin
New Zealand 9054

Prepublication version of an article published in
International Journal for Philosophy of Religion (2011)
DOI: 10.1007/s11153-011-9291-8
The definitive version is available at http://www.springerlink.com.

This draft paper is licensed under the
Creative Commons Attribution-Share Alike 3.0 License.
You are free to cite this material provided you attribute it to its author;
you may also make copies,
but you must include the author's name and include this licence.
http://creativecommons.org/licenses/by-sa/3.0/

Abstract

History and the modern sciences are characterized by what is sometimes called a "methodological naturalism" that disregards talk of divine agency. Some religious thinkers argue that this reflects a dogmatic materialism: a non-negotiable and *a priori* commitment to a materialist metaphysics. In response to this charge, I make a sharp distinction between *procedural* requirements and *metaphysical* commitments. The procedural requirement of history and the sciences – that proposed explanations appeal to publicly-accessible bodies of evidence – *is* non-negotiable, but has no metaphysical implications. The metaphysical commitment *is* naturalistic, but is both *a posteriori* and provisional, arising from the fact that for more than 400 years no proposed theistic explanation has been shown capable of meeting the procedural requirement. I argue that there is nothing to prevent religious thinkers from seeking to overturn this metaphysically naturalistic stance. But in order to do so they would need to show that their proposed theistic explanations are the best available explanations of a range of phenomena. Until this has been done, the metaphysical naturalism of history and the sciences remains defensible.

It is a commonplace to remark that the modern study of history is methodologically naturalistic. In drawing up his account of past events, modern historians do not even consider the possibility of divine action; the only causal factors they will look for are *natural* causes.[1] Historians of nineteenth-century America, for instance, may discuss why the Union forces prevailed over those of the Confederacy in the Civil War. If a historian were to suggest that they prevailed because God wanted to punish the Confederate states for their support of slavery, her fellow historians would respond "with a mixture of bemusement and bewilderment" (Førland 2008: 532). They may accept that she is entitled to hold this view, in her capacity as a religious believer (Førland 2008a: 492; 2008b: 529–30) and they may agree that slavery was an evil with which God (if there is a God) would be displeased. But they would insist that it is not the kind of explanation historians are looking for. As the Christian historian Herbert Butterfield (1900–79) once wrote,

> the historian must play the game according to the rules. Within the scholarly realm that is here in question he is not allowed to bring God into the argument, or to pretend to use him as a witness, any more than a scientist, examining a blade of grass under the microscope, is allowed to bring God into his explanation of the growth or decay of plants. (Butterfield 1979: 134; cf. 1950: 19–20)

As it happens, Butterfield thought that the Christian *could* discern the workings of a divine providence in the events of history. But he agreed with his secular colleagues that such talk of divine action had no place within the academic discipline of which he was a leading practitioner.

1. The Charge of Metaphysical Dogmatism

In recent years, a number of religious thinkers have distanced themselves from this assumption. They argue that this exclusion of divine agency is not a *necessary* feature of the writing of history, but is based on an *a priori* and non-negotiable commitment to a godless metaphysics. Modern historians, they argue, have simply decided in advance that human history cannot be the sphere of divine action. The theologian Murray Rae, for instance, is particularly critical of Ernst Troeltsch (1865–1923), who argued for a historical theology based on the three principles of criticism, analogy, and correlation. Troeltsch, Rae argues, simply assumes that "the world is a closed causal nexus explicable entirely within categories of immanence" (Rae 2005: 16). Sadly, he continues, Troeltsch's view of history has become the dominant view (Rae 2005: 67), being accepted even by many biblical scholars. Since it holds that "history is a closed causal continuum impenetrable to the action of God," it necessarily concludes that miracles – such as the resurrection of Jesus – are impossible (Rae 2005: 67, 70, 74). In a word, the historian's exclusion of divine agency is a *metaphysical* commitment, which is no less an act of faith than that made by the Christian (Rae 2005: 80).

---

[1] It might be more accurate to refer to this stance as "methodological atheism" (Berger 1969: 100) but "methodological naturalism" is the more common term.

A few years ago, the religious historian Brad Gregory made a similar claim. He argued that if we think of "confessional history" as "the imposition of *undemonstrable metaphysical beliefs*, whatever their content, in the practice of scholarship" (Gregory 2006: 136), then much modern history writing is confessional. It differs from confessional religious history only insofar as the assumptions it imposes are anti-religious rather than theological.

> Whereas traditional confessional historians assumed that a particular religious tradition is true and conducted their investigation accordingly, secular confessional historians assume – based ultimately on a dogmatic metaphysical naturalism, or on its functional equivalent, a thoroughgoing epistemological skepticism about all religious claims – that no religion is, indeed *cannot be*, what its believer-practitioners claim that it is. (Gregory 2006: 136–37)

In response to a defense of naturalism by Tor Førland, Gregory offered a further argument, based on what he alleged was a late medieval shift from an analogous to a univocal use of religious language (Gregory 2008: 501). But it is his earlier charge – that of an *a priori* metaphysical commitment, comparable to a religious faith – that I wish to address here.[2]

Other defenders of religion level the same charge against the natural sciences, for modern scientists no less than historians eschew talk of divine action. Phillip Johnson, for instance, protests against the naturalism of the physical and biological sciences, which he identifies with a simple materialism. As he writes of his *bête noire*, the theory of evolution by natural selection,

> Darwinism became unchallengeable scientific orthodoxy not because the creative power of the mutation/selection mechanism was experimentally demonstrated, but because the scientific community adopted standards of evaluation that made something very much like Darwinism inevitable. (Johnson 1995: 105)

---

[2] For other examples of this charge , see Meyer 1979: 101–2 and Wright 1992: 92.

In another place Johnson develops this idea. “For scientific materialists,” he writes, “*the materialism comes first; the science comes thereafter*. We might more accurately describe them as ‘materialists employing science’” (Johnson 1997: 23). So the question I am addressing is not restricted to the field of history; it arises also within the natural and social sciences. The arguments I shall offer are equally applicable to both,[3] so although my primary interest is in the writing of history, I shall sometimes speak of “history and the sciences.”

2. Answering the Charge

How could defenders of the naturalism of history and the sciences respond to this charge? They could do so historically, by investigating the grounds on which historians and scientists have argued in favour of naturalism. Such an investigation would reveal that in many cases, at least, the allegation is unfounded. *Some* historians and scientists may insist that the world is “a closed causal nexus explicable entirely within categories of immanence” (Rae 2005: 16), but there are many who favour naturalism on other, less controversial grounds. Take, for instance, the pioneering biblical scholar, David Friedrich Strauss (1808–74). In arguing against the acceptance of miracle reports, Strauss explicitly tried to avoid controversial metaphysical claims, knowing that these are easily rejected (Strauss 1865: 1.197). He based his rejection of miracle reports on an argument whose metaphysical commitments he believed to be exceedingly thin, namely that offered by David Hume (Strauss 1865: 1.199; 1840: 1.244). Similarly, no one could accuse Herbert Butterfield of hostility to the idea of divine action. He was, after all, a *Christian* historian. Butterfield supported a naturalistic stance, not because he believed that God could not intervene in history, but in order to avoid what he regarded as fruitless metaphysical and religious disputes (Butterfield 1979: 134).

It follows that the naturalism of modern history is not always *motivated* by an commitment to materialism. In fact, it is sometimes defended by thinkers whose metaphysical commitments are explicitly theistic. “But,” a critic might reply, “so what? Even if some people have offered non-metaphysical reasons for espousing naturalism, are they *adequate* reasons? *Should* historians study the world *etsi Deus non daretur* (as if there were no God)?[4] Or should they be prepared to admit proposed theistic explanations of historical events?" This is, of course, the right question to ask, but it is a philosophical rather than a historical question. And it gives rise to a further question, which also merits our attention. If the naturalistic stance of the historian is justified, does this mean that history is necessarily a godless affair? Will the historian and the believer necessarily be at war?

---

[3] For a thoroughgoing discussion of these issues, see Dawes 2009, the argument of which resembles (but is not identical with) that of the present discussion.

[4] The Latin phrase is generally attributed to Hugo Grotius (1583–1645), who

What I wish to argue for here is a nuanced view, which recognizes the truth in the theologians' charge, while also defending naturalism. Modern scientists and historians, I shall suggest, are right to maintain their naturalistic stance: they are justified in their commitment to natural rather than supernatural explanations. But that commitment is merely provisional: it is neither *a priori* nor non-negotiable. So while there exists some tension between a historical and a theological perspective on history, the historian and the believer are not *necessarily* at war. How could this tension be resolved? It would be resolved, in favour of religion, if theologians were to produce adequate theistic explanations of a range of phenomena and show that these were preferable to any proposed natural explanations. Until they do this, historians and scientists are justified in setting aside proposed theistic explanations.

I shall argue for this view by making a sharp distinction between the (non-negotiable) *procedural* requirement of history and the sciences and their (provisional) *metaphysical* commitment to natural explanations. I shall argue that although the procedural requirement is often referred to as a form of "naturalism," this term is unhelpful in this context. Even less helpful is the commonly-used phrase "methodological naturalism." This phrase, which is often used by supporters of a naturalistic stance, confuses epistemological and metaphysical considerations and plays into the hands of its theological opponents.

What is the *procedural* requirement of history and the sciences? It is the demand that any claims about human beings or the world they inhabit should be supported by reference to some publicly-accessible body of evidence. This procedural requirement, does not, in principle, exclude reference to divine agency. It would permit a theistic explanation *if* that explanation could be supported by the right kind of evidence. I shall argue that while procedural requirement *is* a non-negotiable stance, it is also a relatively uncontroversial one, even among Christian thinkers. Indeed it seems to be accepted even by

---

argued in the Prolegomena to his *De jure belli ac pacis* (Section XI) that the existence of a natural law could be known *etiam daremus … non esse Deum* (even if we were to concede … that there is no God).

those (like Brad Gregory) who argue against the metaphysical naturalism of history and the sciences. So if I offer no arguments in support of this procedural requirement, it is because (at least in this context) it does not seem to be in dispute.[5]

What *is* in dispute is the stance that some writers call *methodological naturalism*, but I shall describe as *metaphysical naturalism*. As its name suggests, this *does* excludes reference to divine agency. I shall describe the metaphysical naturalism of history and the sciences as a kind of working ontology, a set of assumptions about what kinds of entities are likely to exist. I shall argue that while historians and scientists do operate with an ontology of this kind, it should be regarded as nothing more than a provisional commitment, justified by reference to the history of these disciplines. It is provisional in that it is defeasible: it could (in principle) be overturned. It *would* be overturned if the theologian were to present a series of successful theistic explanations of the kinds of facts in which scientists and historians are interested. Such explanations would be conform to the *procedural* requirements of history and the sciences, in that they would appeal to publicly accessible bodies of evidence. They would posit the existence and action of God as the most adequate explanation of the facts to which they appeal. But until religious believers do this, the metaphysical naturalism of modern historians and scientists requires no defense beyond the practice of their disciplines.

3. Distinguishing Epistemology and Metaphysics

That is my argument in a nutshell; my paper could end here. But given the recent theological challenge to the naturalism of history and the sciences, it clearly requires some expansion and defense. Let me begin with my central distinction.

(a) A Non-Negotiable Procedural Requirement

What I am calling the *procedural requirement* of history and the sciences entails nothing more than a commitment to a certain *method* of enquiry. It is not unrelated to what Førland calls “critical-realist empiricism” (Førland

---

[5] There have been, of course, fierce disputes among historians about the nature of their discipline, many of which have centered on the idea of “objectivity” in historical research (Novick 1988: 1–2). But although this may have implications for the matters I am discussing, it is not the issue that divides the participants in the present debate.

2008b: 522), although to describe it as a form of “empiricism” may give a misleadingly narrow impression of what it entails.[6] This procedural demand *is* sometimes referred to as a species of naturalism, presumably because it is most clearly expressed, and given a secure institutional embodiment, in the collective procedures of the natural sciences. It demands, loosely speaking, that in whatever field of enquiry we are engaged, we should try to do what the natural sciences do, testing our claims against bodies of observable data. W. V. Quine, for instance, defines “naturalism” as the renunciation of the idea of a first philosophy, somehow prior to empirical enquiry. It insists that “the only means we have of figuring out what the world is like is our experience of the world and our explanatory theorizing about it.”[7] It follows that if we want to discover what kinds of things exist, we should look to what our best scientific theories are telling us, whatever that may be (Quine 1995: 253).

It is, however, unhelpful to describe this procedural requirement as a species of naturalism, since the term is at least potentially misleading. All this procedural requirement demands is that *any proposed explanation should be testable against a body of evidence that is accessible to any capable observer*. In the natural sciences, this corresponds to the idea that an experiment should be replicable. But the kind of evidence required is not limited to the experimental data that is so characteristic of the natural sciences. It could also be the archaeological or documentary data to which historians customarily appeal. This, of course, is why historians have footnotes and why archaeologists record their excavations, so that others can test their claims. The important point is that whatever the evidence is, it ought to be such that it could be checked by any observer who is capable of doing so.

This procedural requirement does seem to be taken for granted in the sciences and within the historical profession. More importantly, it is generally accepted even by those religious thinkers who reject metaphysical naturalism. The only possible exception I can think of is the philosopher Alvin Plantinga, who argues that Christians should practise a science of their own (“Augustinian science”), which would exist alongside the public discipline

---

[6] With regard to empiricism, I am sympathetic to Norman Robert Campbell’s view that “the subject matter of science” – its starting point and that against which its theories are tested – are those matters “concerning with universal agreement can be obtained” (Campbell 1920: 21). If empirical evidence is particularly important in this regard, it is merely because this is the kind of evidence for which universal agreement can be most easily obtained (Campbell 1920: 36).

[7] The words are Susan Haack’s (1993: 353), but they are an excellent summary of Quine’s view.

("Duhemian science"). I shall examine Plantinga's suggestion shortly. For the moment, let me merely note that it is Duhemian science (in Plantinga's sense) with which I am concerned here. Such a science is a public discipline, which can be engaged in by believers and non-believers alike. And at least within this domain, this procedural demand does seem relatively uncontroversial.

It is, for instance, taken for granted by the Christian historian George Marsden, who is a vigorous opponent of the metaphysical naturalism of history and the sciences. In a book entitled *The Outrageous Idea of Christian Scholarship* Marsden argues that Christian historians should not be forced to keep their religious beliefs in an intellectual closet, when Marxists or feminists are permitted to argue in support of their views. Yet in arguing for this position, Marsden does not abandon what I have called the procedural requirement. While defending the use of Christian beliefs in historical scholarship, Marsden notes that Christian historians would have to argue for their views "on the same sorts of publicly accessible grounds that are widely accepted in the academy" (Marsden 1997: 52). As will become clear, I have no argument with such a view.

It would, incidentally, be historically short-sighted to regard this as an exclusively modern demand. When Thomas Aquinas, for instance, offers arguments for the existence of God, he begins from facts that are accessible to any observer and uses a logic that is common to Christian, Muslim, and pagan. In this sense, his arguments also meet the what I am calling the procedural requirements of history and the sciences. While Aquinas is no modern empiricist, he does accept the Aristotelian principle that "there is nothing in the intellect that was not previously in the senses."[8] And he wants the arguments he draws from observable facts to be such that they could persuade those who do not yet share his religious commitments.

It should be clear that this procedural requirement involves no *a priori* commitment to a materialist metaphysics, or indeed to any particular metaphysics. It would still allow one to argue (as Aquinas did) for the existence and action of God. All it demands is that one do so by pointing to observable facts about the world that require the existence and action of God for their explanation. Although Aquinas's famous proofs are cast in the form of deductive arguments, they follow this general pattern. Aquinas points, for instance, to the fact of motion (in the Aristotelian sense of "change") and argues that this requires the existence of a prime mover (*Summa theologiae*

---

[8] Aquinas cites this principle with apparent approval in *De veritate* 2.3.19 & ad 19 (Cranefield 1970: 78).

1a 2.3). In a very different historical context, a theistic philosopher such as Richard Swinburne is engaged in a comparable exercise today, arguing that there are facts about the world – such as the apparent "fine-tuning" of the cosmological constants (Swinburne 2004: 172–88) – that are best explained, or could only be explained, by positing the existence and action of God.

Such arguments for the existence of God are generally regarded as philosophical, but they also meet the procedural demands of history and the sciences. It follows that if they were generally accepted as sound arguments, the existence of spiritual beings would become part of our science (Shanks 2004: 145).[9] This may seem a strange idea, but when discussing his version of the procedural requirement Quine makes precisely this point. "If I saw indirect explanatory benefit in positing sensibilia, possibilia, spirits, a Creator, I would joyfully accord them scientific status too, on a par with such avowedly scientific posits as quarks and black holes" (Quine 1995: 252).

(b) Augustinian and Duhemian Science

It seems, then, that what I am calling the procedural requirement of history and the sciences is relatively uncontroversial. It does not exclude, at least in principle, reference to a divine agent. But this is not to say that it is entirely without challenge. Noteworthy here are the arguments of Alvin Plantinga, who argues that Christians are under no obligation to appeal to publicly-accessible forms of evidence in support of their beliefs. Indeed he freely admits that the attempt to produce such evidence would fail, since "the best arguments for the public rationality of Christian belief are not particularly successful – at any rate they don't show that Christian belief is likely with respect to public evidence" (Plantinga 2001b: 220). But in Plantinga's view, this doesn't mean Christians should abandon their faith. It is sufficient, he argues, for the rationality of Christian faith that Christians can claim it to be a form of warranted, undefeated, basic belief (Plantinga 1981: 41–51; 2000: 498–99). And what he calls "warrant" is an externalist notion: it has to do with the mechanism giving rise to the belief, not with evidence to which a person can appeal (Plantinga 2000: 156).

---

[9] As it happens, Swinburne (2004: 38–45) defines science in such a way that it excludes "personal" explanations: those that appeal to an agent's beliefs, desires, and intentions. Since theistic explanations would be personal explanations, they would (by Swinburne's definition) never count as "scientific." My own view is that this is too narrow a definition of science, since it would exclude many historical explanations, which are also "personal" (intentional) explanations. But as I shall argue later, the important question is whether a proposed explanation is an adequate one, not whether it counts as "scientific."

More importantly, Plantinga claims that Christians are entitled to practise a distinctively Christian form of science, which he calls "Augustinian science." This would differ from the kind of science that can make a claim to universal assent, which Plantinga calls "Duhemian science," after the historian and philosopher of science, Pierre Duhem (Plantinga 2001a: 354–55). Within Augustinian science, it seems, my procedural requirement would not apply, since Christians would be appealing to matters (such as biblical teaching) that only they would recognize as having evidential force. At times, Plantinga believes, Augustinian science could *correct* what our present sciences are telling us (Plantinga 1996a: 121), presumably because those sciences have been distorted by implicit and anti-religious metaphysical commitments.

It is difficult to know how to evaluate this suggestion. Plantinga argues that Christians could engage in Duhemian science, before going on to practise Augustinian science (Plantinga 2001a: 355). And it seems that within the realm of Duhemian science the procedural requirement of publicly-accessible evidence *would* still apply. As Plantinga writes, "if [Duhemian] science is to be properly universal, it cannot employ assumptions and commitments that are not universally shared" (Plantinga 2001a: 354). But Plantinga's suggestion has a disturbing implication. In order to ensure that his science avoided metaphysical disputes, Duhem adopted an *instrumentalist* view of scientific theories. He denied that they can tell us about the underlying structure of the world (Duhem 1962: 19–30). So a corollary of Plantinga's suggestion is that the kind of Duhemian science in which we could all engage would be strictly limited in its scope. Christians would be free to claim that only their Augustinian science can tell us what the world is *really* like. Those Christians who are scientific realists may be unhappy about this view of what we normally call "science" (McMullin 1978: 147)

In any case, perhaps what I should be claiming is that my procedural requirement is relatively uncontroversial, *if* one is talking about history or science as public disciplines: activities that can be engaged in by believers and non-believers alike. Even Plantinga seems to accept that this is how Duhemian science ought to operate. But if this procedural requirement is relatively uncontroversial, what I am calling *metaphysical naturalism* is not. It is metaphysical naturalism to which thinkers such as Rae and Gregory are objecting when they complain about the exclusion of divine agency from the writing of history. That history and the sciences do, in practice, exclude talk of divine agency seems clear. Even when historians and scientists can find no natural explanation, they assume that one exists (Gillespie 1979: 115). The question is not whether history and the sciences *are* naturalistic in this metaphysical sense. The question is: Can this metaphysical naturalism be defended?

(c) Metaphysical Naturalism

I shall argue that it can. But it can be defended only if it is regarded as a provisional commitment, which is based on the results of scientific and historical enquiry and is therefore revisable, at least in principle. Modern historians and scientists, I shall argue, do have a kind of working ontology, a set of assumptions about the kinds of entities that are likely to exist. It is this that determines the kinds of explanations they seek or (more precisely) the kinds of explanations they will (in practice) disregard. But this working ontology should be regarded as nothing more than a provisional set of assumptions,[10] drawn from both common sense and the sciences themselves. If theologians were to accept the *procedural requirement* of history and the sciences – which amounts to nothing more than the need to appeal to publicly-accessible forms of evidence – there is no reason why they could not seek to revise these assumptions. But until we have been given reason to revise our naturalistic assumptions, historians (and scientists) have good reason to seek only non-theological explanations.

I noted earlier that I am avoiding the use of the term "naturalism" for the procedural requirement of history and the sciences, since it confuses epistemology and metaphysics. The same confusion is to be found in the use of the phrase "methodological naturalism" to designate what I am calling metaphysical naturalism. Those who use the phrase "methodological naturalism" often insist that the naturalism they are defending is *merely* methodological: it makes no metaphysical or ontological commitments (Pennock 2000: 190). Ernan McMullin, for instance, writes that

> calling this methodological naturalism is simply a way of drawing attention to the fact that it is a way of characterizing a particular *methodology*, no more. In particular, it is not an ontological claim about what short of agency is or is not possible. (McMullin 2001: 168)

But this is misleading. What writers such as McMullin are calling methodological naturalism may not be overtly metaphysical, but it does (I shall argue) operate with certain metaphysical (or, more precisely, ontological) assumptions. After all, what does this so-called "methodological naturalism" entail? It demands that we investigate the world *etsi Deus non daretur*: as if there were no supernatural causes. And this means investigating the world as though ontological or metaphysical naturalism – the belief that there *are* no supernatural causes – were true. It follows that their naturalism is not "merely" methodological: it adopts, at least for the purposes of explanation, a working ontology, a set of assumptions about what kinds of entities are likely to exist.

---

[10] This resembles Tor Førland's view (2008a: 493) that the naturalism of history is merely a "working hypothesis," albeit one that has a great deal of evidence in its favour.

I am as anxious as McMullin is to defend the (provisional) exclusion of divine agency from history and the sciences. But I don't think anything is gained by trying to pretend that this exclusion is merely methodological. It seems to me more helpful to distinguish, as I have, two components within the naturalism of history and sciences. The first is a (non-negotiable) *procedural requirement* that demands appeal to publicly-accessible bodies of evidence. The second is a metaphysical component – a *metaphysical naturalism* – that involves a (provisional) exclusion of divine agency. What distinguishes the procedural requirement from metaphysical naturalism is that the former (but not the latter) is entirely neutral with regard to the kinds of entities it invokes, as Quine's comment about positing spirits or a Creator makes clear.

4. Naturalism Defended

Let me now set out my argument in support of metaphysical naturalism. As I have described it, the first commitment of the historian or scientist is to a certain *procedural requirement*. Metaphysical naturalism, I shall argue, is simply a consequence of pursuing this procedurally naturalistic line of enquiry. It follows from the historical fact that our best explanations to date have all invoked natural rather than supernatural entities.

(a) Not Naturalistic By Definition

As we have seen, thinkers such as Brad Gregory disagree. They insist that a commitment to metaphysical naturalism comes first. "Science," they hold, *begins* from metaphysical naturalism as a postulate with critical-realist empiricism as its corollary" (Gregory 2008: 506). The modern sciences, they argue, have deliberately limited themselves to seeking only natural causes: "for science to be science, by definition it can pursue, identify, and entertain only natural causes as plausible understandings of natural phenomena" (Gregory 2008: 505).

I believe this "naturalistic by definition" characterisation of the modern sciences to be misleading. Unfortunately, it is a characterisation that is widely shared, even by many would-be defenders of scientific naturalism. They, too, often write as though an exclusive commitment to natural causes followed from the very idea of a science. In so doing, they once again commit the error of confusing epistemological and metaphysical questions, and play into the hands of their critics.

Ernan McMullin, for instance, writes that "methodological naturalism does not restrict our study of nature; it just lays down what sort of study qualifies as scientific" (McMullin 2001: 168). And Michael Ruse insists that science "by definition deals only with the natural, the repeatable, that which is governed by law" (Ruse 1982a: 322). Such claims have been particularly influential in the court cases regarding creationism and intelligent design theory (ID). In December 2005, for instance, a U.S. court ruled against the Dover Area School Board in Pennsylvania, which had sought to introduce ID into the school curriculum. One of the grounds on which Judge Jones justified his ruling was that "ID violates the centuries-old ground rules of science by invoking and permitting supernatural causation" (Jones 2005: 64).

But this is entirely the wrong way to describe the naturalism of history and the sciences. It *does* hand an immediate victory to the opponents of ID, which is easily shown to be, at heart, a religious doctrine. If one defines science in such a way that it can never permit appeal to a divine agent, then ID is immediately excluded from the science curriculum.[11] But what if appeal to a divine agent *were* the best available explanation of a set of puzzling phenomena? Precisely what this would mean will vary from one field to another (Godfrey-Smith 2003: 196). An explanation in history will be judged in different ways than an explanation in physics. But there exist commonly-accepted lists of explanatory virtues, such as scope, explanatory power, and simplicity (Førland 2008a: 491–92), or testability, ontological economy, and informativeness (Dawes 2009: 113). If a range of explanations positing a divine agent could be shown to exhibit such qualities, to a greater degree than any other proposed explanations, what should historians and scientists do?

On my view, they ought to accept the proposed theistic explanations. The metaphysical naturalism of history and the sciences would then be overturned and God would become part of the working ontology with which scientists and historians operate. But on the view expressed by Judge Jones, what would scientists and historians have to say?

---

[11] In fairness to Ruse, he argues (2001: 371) that his definition is not merely stipulative, but reflects the way the word "science" is customarily used. But this doesn't avoid the objection: "So what? This might be how people use the word 'science,' but why should we use it in this way?"

> Yes, this does seem to be the best available explanation of the facts in question. But the centuries-old ground rules of science prohibit us from accepting it. We'll just have to struggle along with our less adequate natural explanations.

While this seems a very odd view, it is close to what Michael Ruse is suggesting. "Even if Scientific Creationism were totally successful in making its case as science," he writes, "it would not yield a *scientific* account of origins" (Ruse 1982a: 322), since science by definition deals only with natural causes. This might be a victory for metaphysical naturalism, but it would be a strange kind of victory nonetheless.

One might, of course, argue that proposed theistic explanations could never meet the procedural requirements of history and the sciences, since God is not the kind of entity whose existence could be demonstrated by reference to publicly-accessible bodies of evidence. Brad Gregory, as we shall see, offers an argument of precisely this form. My response is that if this is true, then theism is in trouble. But I shall argue for this conclusion later (Section 6).

In any case, I think it is a mistake to oppose a proposed theistic explanation (such as ID) with arguments of this kind. In the case of ID, it would be better to argue that it is unacceptable not because it is a religious doctrine – why could it not be *both* scientific *and* religious? – but because it is bad science (Laudan 1982: 18). Insofar as it makes testable predictions, they are not supported by the evidence, but much of the time its claims are simply vacuous, lacking empirical content (Dawes 2007: 79–80). Michael Ruse has responded to this suggestion, made by Larry Laudan, by admitting that the arguments in question were primarily a matter of legal strategy. As he writes,

> the kinds of conclusions and strategies apparently favored by Laudan are simply not strong nough for legal purposes. His strategy would require arguing that creation-science is weak science and therefore ought not to be taught. .... Unfortunately, the U.S. Constitution does not bar the teaching of weak science. What it bars (through the Establishment Clause of the First Amendment) is the teaching of religion. The plaintiffs' tactic was to show that creation-science is less than weak or bad science. It is not science at all. (Ruse 1982b: 20)

But a successful legal strategy is not the same as sound philosophy. In any case, its success may be short-lived. In the long term, such arguments merely hand ammunition to one's opponents, who can suggest (as we have seen) that this definition of science begs the question, is itself a confessional commitment, or is simply bad philosophy (Plantinga 2001a: 344–43).

It is, therefore, a mistake to say that "for science to be science, by definition it can pursue, identify, and entertain only natural causes" (Gregory 2008: 505). What we should say is that for science to be science, by definition it can "pursue, identify, and entertain" only those causes whose existence can be argued for on the basis of publicly-accessible evidence. This procedural requirement is the *only* non-negotiable commitment of history and the sciences.

(b) A Historical Defense

It is also all that is required in order to defend a provisional metaphysical naturalism. The fact that history and the sciences seek only natural explanations requires no defense beyond that provided by the history of these disciplines. The very arguments that support our best historical and scientific theories also support naturalism. If the modern disciplines of history and the sciences fail to include proposed theistic explanations, it is not (at least in the first instance) because they are theistic. It is because they have not been shown to be the best available explanations of the kinds of facts in which historians and scientists are interested.

This is not an entirely novel position. It closely resembles the view put forward some years ago by Theodore Schick, Jr. Schick argues that science should not and does not wear any metaphysical blinders," so that "there is no limit on what science can investigate or what sort of explanations it can construct" (Schick 2000: 31). To say that the sciences presuppose materialism is to overlook the fact that in the history of modern science our conceptions of the underlying structure of the world have been radically revised. Schick illustrates this point by reference to the neutrino whose existence was posited by Enrico Fermi in 1934. This would not have been understood as a "material" particle by either Descartes or Newton, since as originally posited the neutrino was thought to lack both extension and mass (Schick 2000: 34).[12] We would not, of course, regard it as a "supernatural" particle either, but Schick's point is that the scientific enterprise is not committed (in any non-negotiable or *a priori* manner) to a particular view of what kinds of entities exist. On this view, there would be nothing *in principle* to prevent scientists from accepting the existence of a deity. But *in practice* they have excellent reasons not to do so, since all the the theological explanations we have been offered to date are “inferior to natural ones” (Schick 2000: 36).

---

[12] It has since been shown that the neutrino must have a small, but non-zero mass. Nonetheless, the general point remains sound, since even the original hypothesis was regarded as scientific. More generally, it is not clear what "materialism" would mean in the world of modern physics, in which "'matter' has lost its rôle as a fundamental concept'" (Einstein 1961: 162).

In a similar manner, I am arguing that the naturalism of modern history is a simple consequence of historical and scientific enquiry. Historians and scientists seek to discover the best available explanations of the phenomena within their domains and the best explanations we have *are* natural explanations. There is nothing (in principle) to prevent theologians from offering and arguing in support of proposed theistic explanations, which posit the existence of the Christian deity. They would simply need to show that their proposed explanations meet, to a greater degree than any rival, our usual standards of explanatory adequacy.

The problem is that religious thinkers have consistently failed to provide explanations of this kind. Indeed, their proposed theistic explanations have repeatedly been replaced by natural explanations of greater explanatory power. Until 1859, for example, it seemed that the diversity of living organisms could not be accounted for without reference to God, but Charles Darwin provided us with a natural alternative. And as Darwin repeatedly argued, his theory of evolution by natural selection could explain facts (such as the existence of vestigial organs) that remained entirely mysterious on the hypothesis of special creation (Darwin 1968: 428–32). In the face of such successes, as Frederick Gregory has shown (1992: 5–6), many Christian thinkers simply abandoned the natural world to the secular sciences. In this situation, it is hardly surprising if the historian takes little account of the possibility of divine intervention.

To say that history and the sciences have no *non-negotiable* metaphysical commitments is not to say that they lack metaphysical assumptions. No historian or scientist could afford to take seriously *every possible* explanation of the facts she is studying. The explanation of the presence of fossils on mountain tops *could* be “that Martians put them there to surprise us” (Musgrave 1999: 284), but no one would blame a geologist for not taking that proposed explanation seriously. Historians and scientists must regard some proposed explanations as more plausible than others (Førland 2008a: 491–92), and one basis on which they will do so is the past success of explanations of this kind. The history of their own disciplines will provide them with a working ontology, a set of assumptions regardings the kinds of entities that are likely to exist. It is provisional in that it could be overturned by the evidence, but it will not be overturned without good reason. To take Schick’s example, the acceptance of particles such as neutrinos entailed a revision of earlier conceptions of matter, but there were good reasons to posit the existence of such particles.

Given the history of proposed theistic explanations, we can readily understand why they are among the explanations that historians and scientists will disregard. Theories that posit the existence of gods, angels, and demons are not the kinds of theories that have been shown to have explanatory power. Or, to put this another way, while many people continue to believe that entities of this kind exist, they rarely appeal to historical or scientific evidence in support of their belief. In recent times, intelligent design theorists have begun to do so, but – as I have already suggested – ID does not look like good science.

The theist is, of course, not alone in this respect, since theistic explanations are not the only class of proposed explanations to be disregarded on these grounds. Explanations that invoke the actions of intelligent extraterrestrial beings whose spacecraft orbit the earth will be inadmissable for precisely the same reason. They, too, lack the kind of historical track-record that would render them plausible. Theologians don't complain when historians and scientists refuse to take at face value reports of alien abductions. They don't write articles complaining about the "terrestrialism" of history and the sciences.

5. A Working Ontology

I have described the metaphysical naturalism of history and the sciences as a kind of provisional, working ontology, justified by more than four hundred years of successful natural explanations. But it may be useful to spell out in more detail the sources of this ontology and to see why religious claims do not belong there.

(a) Common Sense and Science

My suggestion is that the implicit ontology with which both scientists and historians operate has two sources. The first is that to which I have already referred: it consists of those hypotheses – both scientific and historical – that have been explicitly put to the test and have proved their worth. The testing in question may be a formal process, in which rival hypotheses are weighed against the available evidence, or it may involve less formal processes, such as those we employ in everyday life. (I believe that I saw a large meteorite last night, and check my belief by calling the local observatory.) Those hypotheses that have survived testing posit the existence and operation of certain kinds of entities, which become one element in what we might call the historian's professional worldview.

But the working ontology on which historians draw is not limited to those entities whose existence and operation they explicitly discuss. How could it be? In formulating their explanations, historians take for granted a vast stock of taken-for-granted beliefs. Many of these will be of the kind to which G. E. Moore referred in his defense of common sense.[13] They include the belief that

> there exists at present a living human body, which is my body. This body was born at a certain time in the past, and has existed continuously ever since, though not without undergoing changes; it was, for instance, much smaller when it was born, and for some time afterwards, than it is now. Ever since it was born, it has been either in contact with or not far from the surface of the earth; and, at every moment since it was born, there have also existed many other things [like my body], having shape and size in three dimensions ... . (Moore 1959: 33)

And so on. There is no doubt that we all hold such beliefs and it seems we could not cease to hold them, despite the arguments of the sceptic. Indeed we appear to be born predisposed to form such common-sense beliefs. The ontology they presuppose is, as it were, "hard-wired" into us (Boyer 2002: 48–51, 66–70).

One might argue in that past ages the existence of a deity or deities *was* a matter of "common sense." But this is to use the term "common sense" in a very different manner. It is true that the truth of certain religious beliefs was widely accepted in past ages, as it is widely accepted in some circles today. But that does not make it a matter of common sense in the way in which Moore is using the phrase. What Moore means by "common sense" seems very close to what anthropologist Robin Horton meant by "primary theory," which deals (roughly speaking) with the behaviour of mid-sized physical objects and the existence of personal agency, both one's own and others. Such theory, Horton notes, "does not differ very much from community to community or from culture to culture" (Horton 1993: 321). On this view, both science and theology represent forms of what Horton calls "secondary theory." It follows that common sense, understood as primary theory, has never included beliefs about gods.

The epistemic status of such common-sense beliefs has long been a matter of debate. Are they justified beliefs? How can we counter the sceptic's claim that we could be merely brains in a vat or inhabitants of the Matrix? I shall not attempt to answer that question here, although a recent line of argument may offer a way of doing so. It suggests that such common-sense beliefs are neither self-evidently true, in the sense that no one could hold them and be mistaken, nor are they groundless, so that they must be accepted "on faith." Rather, they *are* supported by evidence. Like the explicit theories of history and the sciences, such beliefs are corroborated by testing, but the corroboration they receive is a *tacit* corroboration.

---

[13] This is particularly the case when dealing with issue of meaning and motivation, where the historian is likely to be dependent on various kinds of folk psychology (Weber 1949: 174).

I have drawn this idea of "tacit corroboration" from the work of Jonathan Adler,[14] who supports it by reference to the Duhem-Quine thesis: the idea that no proposition is tested in isolation (Adler 1990: 559–60). His point is that while many of our taken-for-granted beliefs are never *explicitly* put to the test – precisely because they *are* taken for granted – they are *tacitly* exposed to the possibility of falsification. They are exposed to falsification when they are bundled with beliefs which are explicitly tested (Adler 2002: 164–67). We all take it for granted, for instance, that cows exist. But if cows were to cease to exist, this fact would have observable consequences, even for those of us who live nowhere near a farm. One of those consequences would be the disappearance of milk from supermarket shelves. So every time we find milk on the supermarket shelf, our belief in the existence of cows is tacitly corroborated (Adler 2002: 165).

I find this an attractive suggestion, but my argument does not rely on its being correct. All I need to argue is that if the historian's explanations of history are shaped by a working ontology, then that this ontology is derived from two sources. The first is the set of entities explicitly posited by successful theories and the second is the set of entities whose existence every sane human being takes for granted. The problem for the would-be theological historian is that talk of divine action falls into neither of these categories. So there is simply no reason why the historian or scientists should take it seriously.

(b) Religious Beliefs

Let me begin with the second category, that of the common-sense beliefs that every sane person takes for granted. It may be true, as some cognitive scientists have recently argued, that the structure of our minds naturally predisposes us to religious belief. We appear to have, for instance, a

---

[14] Adler uses "confirmation" where I use "corroboration," which has a slightly different sense. But the differences are of no importance in this context.

"hypersensitive agency detection device" (Barrett 2007: 772–73), which inclines us to perceive agency even in the absence of a visible agent, and we are particularly receptive to stories about agents who violate our intuitive ontology, albeit in minimal ways (Boyer 2002: 70–105). But this "naturalness" of religious belief does not put it into the same category as the common-sense beliefs listed by Moore or Horton (Pyysiäinen 2003: 112). After all, it is precisely the fact that gods and demons *violate* our intuitive, common-sense beliefs which makes them memorable. And it is certainly possible to doubt their existence. Scepticism about the gods has a long and honorable history, whereas scepticism about the existence of other minds, for instance, has never been more than a philosopher's conceit.

The counter-intuitive character of gods and demons would not matter if belief in God fell into the first category: if God were among the entities posited by our most successful theories. After all, the subatomic entities of which physicists speak are not only invisible; they are also radically counterintuitive, to the extent that they can be described only mathematically. (We cannot *imagine* a particle such as the neutrino, if we think of it as lacking both mass and extension.) But at least on a realist understanding of science, we have good reason to believe that such subatomic particles exist, for we have well-corroborated explanations that posit their existence. Is this true for God? No, it is not. As we have seen, when it comes to God, we lack – and it is not clear that we ever had – a successful program of theistic explanation, to compete with the natural explanations offered by history and the sciences. So here, too, there are no grounds for including gods, angels, and demons in our working ontology.

6. Publicly-Accessible Evidence and Theism

While my primary task here has been to defend the metaphysical naturalism of history and the sciences, my argument assumes that a proposed theistic explanation – one that posits the existence and action of God – could (in principle) meet the procedural requirements of history and the sciences. But if it could not, theologians would have no chance of overturning the metaphysical naturalism of history and the sciences, since they could never produce the kind of evidence required.

(a) A Transcendent Deity

Some religious thinkers object that a proposed theistic explanation could never meet these standards since God, if he exists, is not the kind of object that scientists or historians can study. Since he transcends the world, and is not merely one causal factor among others, there will be no empirical data to which theologians can appeal to produce evidence for his existence. Once again, Brad Gregory articulates this line of argument. If God is real, he suggests, then he

> cannot in principle be conceived as part of, alongside, or in competition with the natural world – that is, perhaps God is not a "highest being" or a "supernatural entity" that can in any sense be properly conceived within or as a component of a more comprehensive reality. (Gregory 2008: 502–3)

The reason for this is that God is "radically distinct from the universe," being "metaphysically transcendent" so that even the category of "being" is not applicable to him (Gregory 2008: 503). To suggest that religious claims should be tested against the kinds of evidence sought by the sciences is to make a kind of category mistake, since God transcends such evidence.

What is striking is that this objection was both anticipated and answered by the greatest of late medieval Christian theologians. Thomas Aquinas, as we have seen, accepts the Aristotelian idea that human knowledge comes through the senses. But if this is true, then it might seem that the existence of God could never be demonstrated, since God transcends the senses. As Aquinas writes,

> if, as is shown in [Aristotle's] *Posterior Analytics*, the knowledge of the principles of demonstration takes its origin from sense, whatever transcends all sense and sensibles seems to be indemonstrable. That God exists appears to be a proposition of this sort and is therefore indemonstrable. (*Summa contra Gentiles* I 12.5)

Aquinas's response is to point out that although God does transcend the world of sense, he can be known through his effects, which are observable. It is these observable facts that are the starting point of arguments for God's existence.

> Although God transcends all sensible things and the sense itself, his effects, on which the demonstration proving his existence is based, are nevertheless sensible things. (*Summa contra Gentiles* I 12.9)

So although we could have no direct empirical evidence of God himself, we could (if he exists) have evidence of his existence by means of his effects.

What is puzzling about Brad Gregory's argument is that it ignores Aquinas's response. Indeed Gregory's God seems to have no effect on the world, being truly a *deus otiosus*. I suspect Aquinas would have found this idea as strange as I do. Gregory argues that "every finding and every *possible* finding of natural science is compatible with a notion of God whose radical otherness is precisely the possibility condition of his presence throughout the physical world" (Gregory 2008: 509). If this is true – if what Christians claim about God *is* compatible with "every possible finding of natural science" – then their beliefs would lack empirical content, since the empirical content of a proposition is equivalent to the number of possible states of affairs that it excludes (Popper 2002: 96, 103). And a belief that lacks empirical content cannot be tested, in the way that procedural requirement demands, for no possible observable state of affairs could count against it.

But what Gregory is claiming here seems simply untrue: the God of classical theism is not as *otiosus* as he suggests. Tor Førland has already noted that there are plenty of possible observations that would count against key Christian beliefs. Most Christians believe that "Jesus somehow rose from the dead after his crucifixion – and not just metaphorically" (Førland 2008b: 524), and this belief is incompatible with "the discovery of documents showing either that his disciples had stolen the corpse from the grave and buried it somewhere else, or that he never died, but escaped to India" (Førland 2008b: 524).

More generally, Gregory's conception of God seems incompatible with what Plantinga calls "serious Christian theism" (Plantinga 2001a: 350). On the traditional Christian view, God not only created the world, but is in constant causal interaction with it, since nothing at all would occur if he did not will it (Flew 2005: 56–57; Plantinga 2001a: 350). It is true that God's interaction with the world is often thought to occur by way of created (or "secondary") causes, rather than by way of miraculous divine interventions. So at least on these occasions there is no direct competition between natural and supernatural explanations (Dawes 2009: 67–70). But what would be the point of even such indirect divine activity if it made no observable difference to the world in which we live?

(b) Ockham's Razor

At one point in his discussion, Gregory suggests that the famous principle attributed to William of Ockham – that entities should not be multiplied beyond necessity – is not applicable to theism. As he writes, in Førland's view (from which Gregory is distancing himself) "Occam's razor shaves away what is extraneous: the more science explains, the less God is necessary, until eventually and in principle there is 'no room for God'" (Gregory 2008: 501). But once again the view criticized by Gregory is one endorsed by Aquinas, who employs a principle that anticipates Ockham's razor in order to articulate an argument for atheism.

> What can be accomplished by a few principles is not effected by many. But

> it seems that everything we see in the world can be accounted for by other principles, supposing God did not exist. For all natural things can be reduced to one principle, which is nature, and all voluntary things can be reduced to one principle, which is human reason, or will. Therefore there is no need to suppose God's existence. (*Summa theologiae*, 1a 3.2)

Nulla igitur necessitas est ponere Deum esse: therefore there is no need to suppose God's existence. One is reminded of Pierre Simon Laplace's famous riposte to Napoleon when asked about the place of God in his world-system (*je n'ai pas besoin de cette hypothèse*).

Aquinas, of course, believed that while this "argument from explanatory redundancy" was valid, it was also unsound. There *were* facts about the world that would be inexplicable if God did not exist. One might respond that the kinds of arguments Aquinas produces are not what we would call *scientific* arguments. Even if they conformed to what Aquinas would have understood as *scientia*, they were not "scientific" in our modern sense. While this may be true, it is largely a matter of terminology. Like many philosophers today, I doubt we can have a clear definition of what constitutes a "science" (Godfrey-Smith 2003: 71–74). But this does not prevent us from distinguishing claims to knowledge founded on publicly-accessible forms of evidence from those that lack such support. The important point about Aquinas's arguments is that they appeal to observable facts about the world and suggest that these facts would not be what they are, if God did not exist. So Aquinas's arguments meet what I am calling the procedural requirement of history and the sciences.[15]

(c) The Retreat to Commitment

It is true that a more recent tradition of Christian theology has abandoned such arguments. It no longer engages in what used to be called "natural theology" or (to use Hume's phrase) "experimental theism" (Hume 1993: 67). Indeed, many theologians today expressly reject the idea that "the existence of God can be approached as a scientific hypothesis" which "can be established with a high degree of confirmation by observational evidence" (Salmon 1978: 143).

I am thinking, in particular, of the theological tradition associated with the twentieth-century Swiss theologian Karl Barth, who rejected the "external evidences" for the authority of Scripture to which John Calvin appealed (Barth 1991: 5–6). (See, for example, Calvin's *Institutes of the Christian Religion*

---

[15] This is not, of course, to say that they are sound arguments. That is an entirely different question.

1.8.) Calvin would not, of course, have considered such arguments to be the *basis* of Christian faith, but he did see them as evidence that could be offered in *defense* of that faith. In our own day, Alvin Plantinga does not reject such arguments outright, as Barth does, but he both denies that they are needed and seems sceptical about the possibility that they could succeed (Plantinga 2001b: 217, 220). In any case, he insists that Christian theism does not regard God as “a hypothesis postulated to *explain* something or other” (Plantinga 2001a: 351).

Other Christian thinkers, however, are unhappy with this “retreat to commitment”, as W. W. Bartley once called it (1984: 35–70). They sense that when Christian thinkers rely on assertion rather than argument, there is little reason why the rest of us should take them seriously.[16] I am, needless to say, in agreement with them.

7. An Objection

There is one final objection to my argument, to which I should attempt to respond. It is that this is a kind of “heads I win, tails you lose” position. I have noted that the metaphysical naturalism of history and the sciences entails disregarding proposed theistic explanations. But I have also argued that this is a merely provisional stance, which could (in principle) be overturned. “But,” the believer might object, “how could it be overturned if scientists and historians disregard any theistic explanations that are offered? You are telling them they can ignore the very evidence that would challenge their assumptions.”

On the face of it, this seems a legitimate complaint, but two points can be made in response. The first is that the advocate of theistic explanations is at no greater a disadvantage in this regard than the advocate of any other revolutionary scientific idea. Illuminating in this regard is Thomas Kuhn’s work on the history of scientific revolutions. While most historians believe that Kuhn badly overstates his case (Godfrey-Smith 2003: 87–101), he does show that when faced with evidence against a well-established research program, scientists do not immediately abandon it. They do so only after a considerable period of time and when a better one is available (Kuhn 1970: 77–91). A more sophisticated account of scientific change has been provided by Imre Lakatos, who has argued that scientists tend first of all to modify the

---

[16] See, for example, Richard Swinburne’s responses to Alvin Plantinga (Swinburne 1985: 48–51; 2001: 203–14.)

"protective belt" of auxiliary hypotheses in order to defend the "hard core" of their research program. But when these modifications multiply and especially when they are manifestly *ad hoc* (lacking independent evidential support), scientists will eventually admit that the research program is "degenerating" and it is time to embrace an alternative (Lakatos 1970: 132–88).

It follows that science is an inherently conservative enterprise: *anyone* who proposes a radical revision of our established theories cannot expect that it will be immediately accepted. In many respects, this conservatism seems warranted. The chemist and philosopher Michael Polanyi once noted that one of his own theories was long rejected by the scientific community, even though it turned out to be correct. But rather than complaining about this fact, Polanyi argued that the initial rejection was appropriate. As he writes,

> there must be at all times a predominantly accepted scientific view of the nature of things, in the light of which research is jointly conducted by members of the community of scientists. A strong presumption that any evidence that contradicts this view is invalid must prevail. (Polanyi 1963: 1012)

There is certainly a danger in this, since a researcher proposing a new idea might become discouraged and a true theory might never be accepted. So the scientific community must always allow

> some measure of dissent from its orthodoxy. But scientific opinion has to consider and decide, at its own ultimate risk, how far it can allow such tolerance to go, if it is not to admit for publication so much nonsense that scientific journals are rendered worthless thereby. (Polanyi 1963: 1012)

My second point is that while Polanyi was surely correct, we should not confuse scientific conservatism with dogmatism. The history of the modern sciences suggests that the scientific community's commitment to its metaphysical "orthodoxy" *is* nothing more than a provisional commitment, which *can* be overturned. Revolutionary changes in the way in which we view the world can, and do, occur. Once again Schick's example is useful: the positing of a particle such as the neutrino entailed a radical revision of our ideas regarding matter. But such revisions seem to occur with startling frequency in the history of modern physics. I freely admit that it would not be easy to overturn the assumptions that lie behind the strikingly successful naturalistic research program of history and the sciences. But no one – least of all the present author – is trying to prevent the theist from making the attempt.

Incidentally, this is not a hypothetical scenario. I have already discussed the intelligent design (ID) movement and advocates of ID are today in precisely this situation, as they try to overturn the naturalistic assumptions of modern biology. The argue not only that Darwin's theory is inadequate, but that the "specified complexity" of living organisms can only be explained given the existence of a designer (Dembski 1998: 15–18). In this respect they are following the very program I have suggested the theologian ought to follow: defending what they themselves call the "God hypothesis" (Meyer 1999: 1). While their claims are meeting with vigorous opposition, they are also being widely discussed, by scientists as well as philosophers. As I write, I have on my desk a hefty volume edited by Robert Pennock containing contributions by advocates as well as opponents of ID and published by a leading academic publisher. So advocates of ID have no reason to complain that their ideas are not being taken seriously.

Conclusion

At what conclusion, then, have I arrived? I have argued that we should make a clear distinction between the procedural demands of history and the sciences and their (provisional) commitment to natrual explanations. Their *procedural* demand is nothing more than the requirement that claims be tested against a body of publicly-accessible evidence. While I have suggested that this procedural demand is non-negotiable, I have argued that it is also relatively uncontroversial. What is controversial is the *metaphysical* naturalism of history and the sciences, which excludes talk of divine agency. This naturalism, I have suggested, rests on the fact that historians and scientists operate with a working ontology, a sense of what kinds of entities are likely to exist. This is drawn from both common sense and the results of historical and scientific enquiry. This ontology is merely provisional, in the sense that it could be revised given appropriate evidence. But appropriate evidence is needed. Religious thinkers who fail to offer publicly-testable evidence that their proposed theistic explanations *are* the most adequate explanations on offer have no reason to complain if the rest of us continue to ignore them.

References

Adler, Jonathan E. 1990. "Conservation and Tacit Confirmation" *Mind* 99: 559–70.

————. 2002. *Belief's Own Ethics*. Cambridge, MA: MIT Press.

Barrett, Justin L. 2007. “Cognitive Science of Religion: What Is It and Why Is It?” *Religion Compass* 1: 768–86.

Barth, Karl. 1991. *The Göttingen Dogmatics: Instruction in the Christian Religion* (1924), ttranslated by Geoffrey W. Bromiley. Vol. 1. Grand Rapids, MI: Eerdmans.

Bartley, W. W. III. 1984. *The Retreat to Commitment.* 2nd edition. La Salle, IL: Open Court.

Berger, Peter L. 1969. *The Sacred Canopy: Elements of a Sociological Theory of Religion* (1967). Anchor Books. New York: Doubleday.

Boyer, Pascal. 2002. *Religion Explained.* London: Vintage.

Butterfield, Herbert. 1950. *Christianity and History.* London: G. Bell and Sons.

————. 1979. “Does Belief in Christianity Validly Affect the Modern Historian?” In *Herbert Butterfield: Writings on Christianity and History* edited by C. T. McIntyre, 133–50. New York: Oxford University Press.

Campbell, Norman Robert. 1920. *Physics: The Elements*. Cambridge: Cambridge University Press.

Cranefield, Paul F. 1970. “On the Origin of the Phrase *nihil est in intellectu quod non prius fuerit in sensu.*” *Journal of the History of Medicine* 25: 77–80.

Darwin, Charles. 1968. *The Origin of Species by Means of Natural Selection* (1859). Pelican Classics. Harmondsworth, UK: Penguin.

Dawes, Gregory W. 2007. “What *is* Wrong with Intelligent Design?” *International Journal for Philosophy of Religion* 61: 69–81.

————. 2009. *Theism and Explanation.* Routledge Studies in the Philosophy of Religion 6. New York: Routledge.

Dembski, W. A. 1998. *The Design Inference: Eliminating Chance through Small Probabilities.* Cambridge Studies in Probability, Induction, and Decision Theory. Cambridge: Cambridge University Press.

Duhem, Pierre. 1962. *The Aim and Structure of Physical Theory* 2nd edition (1914) translated by Philip P. Wiener. New York: Atheneum.

Einstein, Albert. 1961. *Relativity: The Special and the General Theory* translated by Robert W. Lawson. New York: Three Rivers Press.

Flew, Antony. 2005. *God and Philosophy.* New edition. Amherst, NY: Prometheus.

Førland, Tor Egil 2008a. “Acts of God? Miracles and Scientific Explanation”

History and Theory 47 (2008): 483–94.

————. 2008b. “Historiography without God: A Reply to Gregory” *History and Theory* 47 (2008): 520–32.

Gillespie, Neal C. 1979. *Charles Darwin and the Problem of Creation*. Chicago, IL: University of Chicago Press.

Godfrey-Smith, Peter. 2003. *Theory and Reality: An Introduction to the Philosophy of Science*. Science and its Conceptual Foundations. Chicago, IL: University of Chicago Press.

Gregory, Brad S. 2006. “The Other Confessional History: On Secular Bias in the Study of Religion.” *History and Theory* 45: 132–49.

————. 2008. “No Room for God? History, Science, Metaphysics, and the Study of Religions.” *History and Theory* 47: 495–519.

Gregory, Frederick. 1992. *Nature Lost: Natural Science and the German Theological Traditions of the Nineteenth Century*. Cambridge, MA: Harvard University Press.

Haack, Susan. 1993. “The Two Faces of Quine’s Naturalism” *Synthese* 94: 335–56.

Horton, Robin. 1993. *Patterns of Thought in Africa and the West: Essays on Magic, Religion and Science. C*ambridge: Cambridge University Press.

Hume, David. 1993. *Dialogues and Natural History of Religion* (1779, 1757). Oxford World’s Classics. Oxford: Oxford University Press.

Johnson, Phillip E. *Reason in the Balance: The Case Against Naturalism in Science, Law, and Education* (Downers Grove, IL: InterVarsity, 1995)

————. 1977. “The Unravelling of Scientific Materialism” *First Things* 77 (November)

Jones, John E. 2005 “Memorandum Opinion” Kitzmiller et al. vs Dover Area School District, U.S. Supreme Court for the Middle District of Pennsylvania, 20 December (http://www2.ncseweb.org.wp)

Kuhn, Thomas. 1970. *The Structure of Scientific Revolutions*. 2nd edition. International Encyclopedia of Unified Science. Chicago, IL: University of Chicago Press.

Lakatos, Imre. 1970. “Falsification and the Methodology of Scientific Research Programmes.” In *Criticism and the Growth of Knowledge* edited by Imre Lakatos and Alan Musgrave, 91–196. Cambridge: Cambridge University Press.

Laudan, Larry. 1982. "Commentary: Science at the Bar-Causes for Concern" *Science, Technology, & Human Values* 7 :41 (Autumn): 16–19.

McMullin, Ernan. 1978. "Structural Explanation." *American Philosophical Quarterly* 15: 139–47.

————. 2001. "Plantinga's Defense of Special Creation." In *Intelligent Design Creationism and its Critics: Philosophical, Theological, and Scientific Perspectives* edited by Robert T. Pennock, 165–96. A Bradford Book. Cambridge, MA: MIT Press.

Marsden, George M. 1997. *The Outrageous Idea of Christian Scholarship*. New York: Oxford University Press.

Meyer, Ben F. 1979. *The Aims of Jesus*. London: SCM.

Meyer, Stephen C. 1999. "The Return of the God Hypothesis." *Journal of Interdisciplinary Studies* 11: 1–38.

Moore, G. E. 1959. "A Defence of Common Sense" (1925). In *Philosophical Papers*. London: Macmillan.

Musgrave, Alan. 1999. *Essays on Realism and Rationalism*. Series in the Philosophy of Karl R. Popper and Critical Rationalism XII. Amsterdam: Rodopi.

Novick, Peter. 1988. *That Noble Dream: The "Objectivity Question" and the American Historical Profession*. Ideas in Context. Cambridge: Cambridge University Press.

Pennock, Robert T. 2000. *Tower of Babel: The Evidence Against the New Creationism*. Cambridge, MA: MIT Press.

Plantinga, Alvin. 1981. "Is Belief in God Properly Basic?" *Noûs* 15: 41–51.

————. 1996a. "When Faith and Reason Clash: Evolution and the Bible." In *Intelligent Design Creationism and its Critics: Philosophical, Theological, and Scientific Perspectives* edited by Robert T. Pennock, 113–45. A Bradford Book. Cambridge, MA: MIT Press.

————. 2000. *Warranted Christian Belief*. New York: Oxford University Press.

————. 2001a. "Methodological Naturalism?" In *Intelligent Design Creationism and its Critics: Philosophical, Theological, and Scientific Perspectives* edited by Robert T. Pennock, 339–61. A Bradford Book. Cambridge, MA: MIT Press.

————. 2001b. "Rationality and Public Evidence: A Reply to Richard Swinburne." *Religious Studies* 37: 215–22.

Polanyi, Michael. 1963. "The Potential Theory of Adsorption." *Science* NS 141: 1010–13.

Popper, Karl R. 2002. *The Logic of Scientific Discovery* (1959). Routledge Classics. London: Routledge.

Pyysiäinen, Ilkka. 2003. "True Fiction: Philosophy and Psychology of Religious Belief." *Philosophical Psychology* 16: 109–25.

Ruse, Michael. 1982a. *Darwininsm Defended: A Guide to the Evolution Controversies*. Reading, MA: Allison-Wesley.

————. 1982b. "Response to the Commentary: *Pro Judice*" *Science, Technology, & Human Values* 7:41 (19–23).

————. 2001. "Methodological Naturalism under Attack." In *Intelligent Design Creationism and its Critics: Philosophical, Theological, and Scientific Perspectives* edited by Robert T. Pennock, 363–85. A Bradford Book. Cambridge, MA: MIT Press.

Quine, W. V. 1995. "Naturalism; Or, Living Within One's Means." *Dialectica* 49: 251–61.

Rae, Murray A. 2005. *History and Hermeneutics*. Edinburgh: T. & T. Clark.

Salmon, Wesley. 1978. "Religion and Science: A New Look at Hume's 'Dialogues.'" *Philosophical Studies* 33: 143–76.

Schick, Theodore Jr, "Methodological Naturalism vs. Methodological Realism" *Philo* 3 (2000): 30–37.

Shanks, Niall. 2004. *God, the Devil, and Darwin: A Critique of Intelligent Design Theory*. Oxford: Oxford University Press.

Strauss, David Friedrich. 1840. *Die christliche Glaubenslehre in ihrer geschichtliche Entwicklung und im Kampfe mit der modernen Wissenschaft dargestellt* (Tübingen: C. F. Osiander, 1840)

————. 1865. *A New Life of Jesus* (1864). London: Williams & Norgate.

Swinburne, Richard. 1985. Review of *The Miracle of Theism* by J. L. Mackie , *Faith and Rationality* edited by Alvin Plantinga and Nicholas Wolterstorff , *Faith and Reason* by Anthony Kenny , and *God and Skepticism* by Terence Penelhum . *The Journal of Philosophy* 82: 46–53.

————. 2001. "Plantinga on Warrant ." *Religious Studies* 37: 203–14 .

————. 2004. *The Existence of God* 2nd edition. Oxford: Clarendon Press.

Troeltsch, Ernst. 1991. “Historical and Dogmatic Method in Theology” (1898), translated by Ephraim Fischoff and revised by Walter Bense in *Religion in History—Ernst Troeltsch: Essays Translated by James Luther Adams and Walter F. Bense*, 11–32. Edinburgh: T & T. Clark.

Weber, Max. 1949. *The Methodology of the Social Sciences* (1904–17) translated and edited by Edward A. Shils and Henry A. Finch. Glencoe, IL: Free Press.

Wright, N. T. 1992. *Christian Origins and the Question of God*: Volume One: *The New Testament and the People of God.* London: SPCK.