

## **Science on Trial: Exploring the Rationality of Methodological Naturalism**

**Robert C. O'Connor**  
Department of Philosophy  
Wheaton College  
Wheaton, IL 60187

From *PSCF* **49** (March 1997): 15-30

*In this essay, I closely scrutinize the proposal presented in a recently edited volume entitled *The Creation Hypothesis: Scientific Evidence of an Intelligent Designer* by J. P. Moreland. Moreland chides Christians for what he takes as their failure to understand the proper integration of their faith with secular disciplines, particularly the natural sciences. Contributors to this volume propose a "theistic science" which focuses primarily on the tactical or strategic proscription against direct reference to divine agency (methodological naturalism [MN]). These authors endorse the inclusivity principle, that is, the claim that explanations in terms of the direct and immediate activity of a divine agent may constitute a proper part of natural science.*

*As I see it, the recommendation takes two forms: (1) it is positively irrational for the Christian engaged in natural science to remain committed to MN, and (2) because science has no intrinsic individuating features, it is irrational for the broader scientific community to continue to resist appeal to immediate divine agency as a proper part of natural science. Specifically, I argue that the first statement is mistaken, and the second is ill-advised. The disciplinary distinction, as determined in part by MN, is well-grounded, intrinsically valuable, and, when properly understood, a critical component of Christian inquiry. I conclude that permitting direct reference to divine agency in natural science severely undermines the overall quest for truth.*

**I**n a recently edited volume entitled *The Creation Hypothesis: Scientific Evidence of an Intelligent Designer*, as well as in this journal,<sup>1</sup> J. P. Moreland chides Christians for what he takes as their failure to understand the *proper* integration of their faith with secular disciplines, particularly the natural sciences, and for capitulating too readily to the

"question-begging Procrustean legislation" imposed by the secular practitioners of their craft.<sup>2</sup> Moreland, with support primarily from Stephen C. Meyer and William A. Dembski, proposes an alternative and distinctively Christian approach to the sciences: "theistic science" is "rooted" in the idea that Christians ought to consult all they know or have reason to believe in forming and testing hypotheses, explaining things in science and evaluating the plausibility of various scientific hypotheses, and among the things they should consult are propositions of theology (and philosophy).<sup>3</sup> Accordingly, the central doctrine of creation can and should "enter into the very fabric of the practice of science and the utilization of scientific methodology."<sup>4</sup>

When stated in these terms, this seems wholly commendable advice. There are many respects in which specifically Christian beliefs ought to bear upon scientific inquiry. Yet, their argument for "theistic science" focuses primarily on the tactical or strategic proscription against direct reference to divine agency. The central idea behind this proposal holds that, since the Christian knows that God occasionally directly interacts with the natural created order, a Christian scientist can, and should, specifically incorporate that belief into scientific accounts. Thus, an attenuated "natural science" transforms into a fully informed "theistic science." Having this larger stock of true beliefs, the theist has available additional explanatory resources. As such, the theistic scientist has a greater prospect to achieve a fuller and proper understanding of creation, and will quite simply become a better scientist *by unapologetically drawing upon the full array of potential explanatory accounts*. The main obstacle on this royal road to truth is methodological naturalism (MN) which maintains that "only natural objects and forces can be referred to in scientific explanations."<sup>5</sup> Thus, arguing that this *principle of exclusivity* is irrational, conspiratorial, and a positive impediment to truth, these authors reject this constraint. Rather, they endorse the *inclusivity principle*, i.e., the claim that explanations in terms of the direct and immediate activity of a divine agent may constitute a proper part of natural science. Taking his cue from the "postmodern" critique of the exclusivity of "enlightenment rationality,"<sup>6</sup> Meyer, in particular, calls for the scientific community to grant equal consideration to divine action as comprising a legitimate *scientific* explanation. Repudiating MN, the theistic scientist ought to actively develop scientific accounts which as readily appeal to divine agency as to natural mechanisms.

In this paper, I will closely scrutinize this proposal. As I see it, the recommendation takes two forms: (1) it is positively irrational for the Christian engaged in natural science to remain committed to MN, and (2) because science has no intrinsic individuating features, it is irrational for the broader scientific community to continue to resist appeal to immediate divine agency as a proper part of natural science. Specifically, I will argue that the first statement is mistaken, and the second is ill-advised and potentially dangerous. Indeed, the contributors to this volume, especially Stephen Meyer, do a *disservice* to Christian scholarship by advocating a position that is ill-motivated, unnecessary, and potentially damaging to Christian interests. The integration of these disciplines should not result in the assimilation of either science or theology to the other; the disciplinary distinction, as determined in part by MN, is well-grounded, intrinsically valuable, and, when properly understood, a critical component of *Christian* inquiry. I will conclude that

permitting direct reference to divine agency in natural science severely undermines the overall quest for truth. Thus, if there is a distinctively "Christian way of doing science," it does not come by repudiating MN.

## Understanding MN

It must be understood as a radical departure from the present nomenclature to insist that appeal to direct nonnatural agency is a legitimate move *within the sciences*. It is clear in *The Creation Hypothesis* that by calling for an inclusive understanding of science, Moreland, et al. do not intend simply to voice support for natural theology in general, or even, as the subtitle of the book suggests, to limit their efforts to the validation of the claims regarding "Scientific Evidence for an Intelligent Designer." It is not their central interest to argue for the epistemic legitimacy of belief in divine agency, but to recommend theistic science as a legitimate successor to natural science.

This is evident in their construal of natural science's commitment to MN. Adopting a distinction used by Howard J. Van Till, we might distinguish between a *broad* and *narrow* construal of the "naturalistic" constraint on science.<sup>7</sup> If MN required that scientific accounts refer only to entities whose *ultimate source were also naturalistic*, then we might read Moreland's proposal as properly objecting to the presumptive and illicit limitation placed upon the scope of divine power and influence.<sup>8</sup> Read according to this broad construal, these writings constitute a (laudable) apologetic for the possibility of *natural theology*, for it is natural theology which asks whether there is an eventual point at which it is reasonable to suppose that natural explanations fail and a theological explanation should be given. The narrow, more charitable reading of MN, on the other hand, says that scientific accounts must refer to *wholly* natural phenomena, making no reference to *immediate* or *direct* contribution by nonnatural or supernatural agency, while permitting further, nonscientific appeal to the divine as the ultimate and sustaining source, meaning, and purpose of all natural phenomena. Adopting this narrow construal, the battle for inclusivity is joined at the level internal to the discipline of natural science itself, rather than at the level of overall world views.<sup>9</sup> Although much of the language they use suggests that our authors intend to rebut the former, broader construal of MN, their explicit appeal for the principle of inclusivity requires us to understand their position as actually addressing the second, narrow version.

## MN and the Rationality of Science

As we have seen, it is the central contention of these inclusivist authors that MN ought to be rejected for placing an "artificial limitation" upon the scientific quest for truth. Meyer holds that

Methodological Naturalism is not so much irreligious as *irrational*. Hyperbole aside, strict naturalism functions (at least within origins research) to close off legitimate lines of inquiry and avenues of potential explanation.<sup>10</sup>

According to this interpretation, MN is simply an arbitrary and prejudicial vestige of an obviously mistaken understanding of science and knowledge in general. Thus, he labels

MN an example of yet "...another untenable enlightenment view of rationality."<sup>11</sup> In this section, I will consider various possible interpretations of the irrationality claim.

### **MN is irrational because it is intellectually stultifying.**

There is a pervasive confusion which carries portentous polemical weight. Is commitment to MN intellectually stultifying; does it constitute an impediment to the goal of science?<sup>12</sup> On the face of it, the answer would appear to be "No." MN does not place "artificial limitations upon theory construction," as Meyer supposes, but rather places limitations on *scientific* theory construction. MN does not have the effect of "disqualifying theories that invoke nonnaturalistic events - such as instances of agency or intelligent design," but rather simply refuses to regard such theories as comprising a proper part of "natural science."

Certainly, there are scientists who, while writing in an often strident mode, invoke MN (most often in its broad form) with the express intent of *excluding from rational consideration* appeal to divine agency. Furthermore, many secular (and Christian)<sup>13</sup> theorists uncritically and unwittingly collaborate with these "conspirators" by embracing the distinction between the scientific and nonscientific captured by MN, narrowly construed, *along with* an often tacit belief in the inferior epistemic status of the latter (which, in this context, becomes "pseudo-science"). However, if we, with Moreland, et al., explicitly reject broad naturalism as an intrusive and mistaken metaphysic, as well as all forms of "scientism,"<sup>14</sup> then the disciplinary distinction entailed by MN should pose no threat to the epistemic status of a broadly theistic hypothesis. It would certainly be irrational to pursue an activity whose end, and so rationale, explicitly *contradicts* our antecedent background beliefs. But the narrow construal, which we have identified as both the species of naturalism to which natural science is actually committed and that species against which Moreland, et al. must be arguing when they press for inclusivity, is compatible with theism and should not prove equally stultifying. According to this constraint, a scientist *could* posit and examine natural phenomena - the origins, sustenance, or purpose of which may lie in divine agency.

Thus, MN need not prove an impediment to theistic scientists' search for truth, unless they mistakenly suppose that pursuit of truth is the exclusive domain of science. That is, although commitment to MN *narrowly* construed, when *coupled with* belief in either the weak or strong version of scientism, would have a stultifying effect on theological belief, it does not follow that MN itself, when narrowly construed, impedes the quest for truth. If, by endorsing MN, we risk sliding toward a tacit approval of scientism, then surely the Christian must carefully weigh this possible outcome against any evident benefits.<sup>15</sup> Nonetheless, it would surely be infelicitous for the Christian to presume this *compatibilist* understanding of scientific method to be irrational.

### **MN commits science to an irrational goal**

Meyer's irrationality argument seems to be concerned primarily with *instrumental rationality*, that is, the methods used to achieve the ends toward which an activity aims.

The question of instrumental rationality asks whether MN constitutes a reasonable means for achieving the goals of natural science. But the answer to this question depends on discerning the goals of natural science. How does MN fair with respect to the *goal* of accounting for experience in natural terms? Since MN simply says that natural science must (minimally, but necessarily) refer exclusively to natural phenomena without reference to immediate or direct supernatural intervention, the restriction is simply incontestable.

This suggests, then, that rather than simply challenging natural science at the level of proper methodology (the best means by which to achieve some end), the irrationality argument challenges "the goal of science" itself. By questioning the propriety of MN, the inclusivists effectively challenge the assumption that science aims to provide natural explanations. Thus, construing the irrationality argument in this manner actually serves to move the discussion from a consideration of the instrumental rationality of a particular methodological constraint to the *rationality of natural science itself*.

---

**If the measure of good science lies in its prospects to provide a true and comprehensive understanding of reality, then it does seem positively irrational because it would be contrary to independently supported background knowledge for the Christian to remain committed to the exclusivity principle.**

---

Is science, in its very goals, irrational? If the measure of good science lies in its prospects for providing a comprehensive and fully naturalistic understanding of reality, then, because this goal contradicts independently supported background knowledge of the Christian, it would constitute a positively irrational pursuit. Yet, is it, in fact, the aim of natural science simply to provide understanding of the natural order by appeal to *whatever* accounts hold the greatest explanatory power? Although understanding of reality is a goal of natural science, it is a shared, not the *distinguishing*, goal.<sup>16</sup> The goal of natural science should be conceived as aiming toward an understanding of natural entities, processes, events, states of affairs, relationships, and such, as *natural entities, processes, events, states of affairs, relationships, and such*, i.e., explaining those phenomena from start to finish in natural terms.<sup>16</sup> This does not commit the scientist to the view that all phenomena can be given a *complete* natural explanation (or indeed any), but only to the view that scientific explanations account for natural phenomena as far as they can in *completely* natural terms.

There are, of course, many ways to understand a phenomenon, including such concerns as its aesthetic value, moral significance, economic impact, and divine purpose. From among these disparate explanatory interests, we pick out natural science as that activity specifically concerned with perceiving that phenomenon as a functional constituent of the natural created order.<sup>17</sup> It is this peculiar interest in natural phenomena which

*differentiates* a scientific pursuit from other particular interests (e.g., moral, political, theological), *as well as from the broader, more inclusive, epistemic goal* of achieving a comprehensive understanding of reality. Other accounts may also contribute to a broader understanding of reality; each may share in "the truth of the matter."<sup>18</sup> Nonetheless, the goal of natural science cannot be conceived as "knowledge," "truth," or even "understanding" *simpliciter*. For as goals, these notions do not distinguish natural science from many other human endeavors (e.g., story-telling, poetry, torture, hypnosis, or mystical experience). Since they do not capture the goal of natural science, nor, as we shall argue, should they, MN does not fail us on the grounds of instrumental irrationality.

### **MN proscribes pursuit of particular scientific accounts**

Perhaps these inclusivists do not seek to broaden the very goals or aims of natural science in this manner, but rather consider MN as irrational because it doesn't allow consideration of *particular* natural explanatory accounts, such as those derived from a religious text. If MN prevented any consideration of specific hypotheses, or particular accounts of the initial conditions, then MN surely would "...leave open the possibility that the best explanations may not have been considered."<sup>19</sup>

But does MN have this effect? We have interpreted MN as demanding that a scientific explanation refer exclusively to natural phenomena, "the ontological origin of [their] existence...[n]either specified [n]or implied."<sup>20</sup> But, this restriction on natural science leaves quite open the possibility that a particular scientific account, which has its origin in any manner of psychological, sociological, or ideological source, can be subsequently subjected to rational evaluation. If certain kinds of hypotheses are excluded out of hand, based purely on an epistemic bias against their *source*, then the comparison group will be skewed, and the quest for truth may be impeded.<sup>21</sup> Unless any available account - *no matter the source of inspiration, motives, beliefs, agendas, or interests of its advocates* - is granted due consideration, there is a chance of missing the best account.<sup>22</sup> Again, we ask, is it MN that has this deleterious effect? Origins research may postulate hypotheses regarding natural phenomena generated from nonscientific, or, in some cases, nonrational sources. MN must and, in fact, does allow for consideration of these accounts as readily as those generated from other, more broadly acceptable, sources.

This is not to say that science should spend its time and energies assessing the intrinsic merits of outrageous hypotheses; science should not waste effort on hypotheses the origins of which are deemed positively irrational. Yet, this constraint is neither peculiar to natural science, nor an impediment, for instance, to Creation Science. In any case, it is not MN that constrains proper scientific investigation to those hypotheses having at least a modicum of initial plausibility. Thus, once again, *unless MN is coupled with some form of scientism (in particular the belief that all theologically motivated theories are irrational)*, commitment to MN does not - despite the polemic of prominent practitioners - constitute grounds for dismissing without consideration natural accounts for which the *only* motive is found in a particular interpretation of Scripture.

---

**It is not MN that constrains proper scientific investigation  
to those hypotheses having at least a modicum of initial plausibility.**

---

Should science tolerate the kind of dissent from the "ruling paradigm" evident in Special Creationist writings? Surely it must, and has; what one hears is that, to the extent to which Creation Science posits natural explanatory phenomena (fixed species, separate origination of distinct species, a universal flood, a young earth, etc.), it must be considered science, even if deemed by some as "bad science."<sup>23</sup> Does it follow from this assessment that Special Creationism is incorrect? Only if science is the sole source of our knowledge of nature. Thus, the Christian in search of the truth may judge a particular scriptural interpretation as having such independent epistemic assurance as to overwhelm a particular rival (scientific) account, particularly when that account has unresolved problems of its own.

Of course, a Christian may also wish to devote effort in redressing the scientific deficiencies in a Special Creationist story, in spite of the continued dominance of the alternative paradigm. There is a fairly compelling argument to the effect that Creation Science is judged harshly - even from within the Christian community - precisely because it has not been taken seriously and therefore not pursued as vigorously by scientists as have rival accounts. The temptation, then, is to castigate MN for its association and (intentional?) confusion with metaphysical naturalism. According to this line of reasoning, if *scientists* were given the methodological green light to cite immediate divine agency, thereby allowing a thorough *scientific* exploration of the expectations arising from Special Creationism, then the relative strengths of "scientific creationism" would be evident. Therefore, Christians ought to reject MN. What are we to make of this apparently compelling argument?

It is right to suppose that Christians should have a strong interest in exploring those theoretical accounts suggested by their preferred reading of Scripture. As Moreland argues, "Theology can provide predictions (or retrodictions) of empirical data (e.g., that humans arose in the Mideast, various inferences from models of a universal flood, young-earth predictions about the age of the earth, gaps in the fossil record)...."<sup>24</sup> It is simply not necessary, however, to reject the exclusivity principle in order to legitimate this line of research. MN is not in the business of making the sort of plausibility assessment which renders a particular hypothesis "available" for scientific consideration; it merely dictates that the hypothesis refers exclusively to natural phenomena.

---

**[MN] merely dictates that the hypothesis refers  
exclusively to natural phenomena.**

---

If the hypothesis does posit natural phenomena and fits well within Scripture or church tradition, then the Christian ought to explore it thoroughly and vigorously, even if (or, *especially* if) one supposes that phenomenon to result directly from divine agency. If, on the other hand, a hypothesis involves direct reference to nonnatural phenomena (powers, entities, states, etc.), then it ought to be explored thoroughly and vigorously in a manner in keeping with that discipline under which it falls. It may require theological expertise for a full explication of that hypothesis; for instance, it is presumably the business of theology to tell us that God is the immediate source of some natural phenomenon, or why God might have created in a certain manner at a certain place and time, or what we might expect of God in the matter of creation. The relative merits of this account would then be weighed against the strongest scientific model which will provide a natural account (including appeal to chance - the null hypothesis). In any case, since MN presents no obstacle to this pursuit, it should not be regarded as irrational. If, as we shall argue, MN makes a positive contribution to knowledge, then theists are well served by this constraint.

### **MN represents an unattainable goal for science**

Moreland, et al. may be arguing that, if MN is not *inherently* irrational, then it is irrational insofar as it is unattainable. Since the goal of providing naturalistic explanations of all phenomena is quite simply unattainable, then it would be irrational to retain a commitment to a concept of science operating under this restriction. Many in the scientific community question whether origins research will be settled in strictly natural terms. Meyer footnotes an impressive list of attempts by scientists to "explain how purely natural processes could have given rise to the unlikely and yet functionally specified systems found in biology..."<sup>25</sup> Given the lack of consensus and the provisional nature of these explanations, Meyer concludes that the origins of life "remains essentially mysterious on any current naturalistic evolutionary account."<sup>26</sup> Other authors in *The Creation Hypothesis* press for a similar conclusion based on the apparent impotence of natural accounts of the origin of major groups of organisms, the origin of human consciousness and language, and the origin of the life-sustaining structure of the universe.

---

**The goal of science in providing a "purely natural account" should be viewed as having both intrinsic as well as extrinsic cognitive value.**

---

Indeed, the lessons of origins research may well be the realization that the more we account for in natural terms, the more remains unexplained. Let us allow that gains in understanding are being outstripped exponentially by new puzzles and challenges. This may suggest that, if science intends to provide a complete account of natural phenomena in purely natural terms, it will never complete the task. Still, does the certain failure of science warrant charges of irrationality to commitment to MN?

In fact, it may remain rational to pursue a goal knowing that pursuit will meet with failure, if the pursuit enables one to achieve a less ambitious, but no less valuable goal - namely accounting for natural phenomena in strictly natural terms, *as far as one can*.<sup>27</sup> Even as the evidence mounts against fulfilling the more formidable goal, its pursuit may continue to prove valuable for those gains achieved. If the exact extent of our ability to provide natural explanations remains unknown, conceding too much too soon may serve to cut short a venture which holds forth the prospect of considerable conceptual gains. Furthermore, a relentless pursuit of natural explanations, though ultimately futile, may prove useful to our interest in a comprehensive understanding of reality. The extent and exact nature of this failure may provide a metaphysician with data useful to account for the full-orb of reality, natural and nonnatural. Thus, the goal of science in providing a "purely natural account" should be viewed as having both intrinsic as well as extrinsic cognitive value. Scientific explanations are intrinsically worthwhile, since they provide valuable understanding of the world. Furthermore, that natural science only goes so far (as here demonstrated by its own breakdown) makes an equally valuable contribution to the quest for a comprehensive account of reality.

"But," the inclusivist might respond, "your suggestion misses the point, for the Christian *already knows* the nature of reality, viz. God stands as the ultimate source of all things. We don't need the evident failure of science as support for the rationality of this belief." However, in the absence of a definitive revelatory account, the exact extent and nature of immediate divine agency may only be manifest through a stubborn pursuit of a natural account.<sup>28</sup> Setting aside for the moment the question of the exact point at which one might invoke God, there remains an important response. Christians may regard MN as representing a *pragmatic*, though no less valuable, *goal*, useful for apologetic purposes. If, as this response suggests, the Christian does not need the breakdown of natural science to support one's belief in divine agency, one may nonetheless embrace natural science for no other reason than that it takes its task so seriously as to accentuate its own shortcomings. Since there is nothing incompatible with theism and MN, it would not be irrational, even for the Christian, to seriously undertake the task of natural science, if only to evidence its ultimate impotence due to the limitations placed upon it by the naturalist constraint.

### **MN represents an arbitrary and artificial, thus irrational, commitment to a deficient under-standing of scientific rationality**

Here the claim is that all of the above construals of the irrationality thesis understate the force of the argument against MN. When Meyer says that MN places "[a]rtificial limitations upon theory construction only [to] leave open the possibility that the best explanations may not have been considered,"<sup>29</sup> he means to emphasize the extent to which MN stifles accounts which, *if given due consideration* - proper attention and full development by the *scientific* community - would rival the natural alternatives in strength of merit. Any view of science that stubbornly resists their inclusion should be deemed irrational. This seems to render the irrationality argument in its strongest form: it is irrational not to view progressive creationism and/or young earth creation-science "as ways of specifying creationism as a [scientific] research program."<sup>30</sup>

---

**Even if commitment to MN is not positively irrational,  
we may nonetheless hold out for the prudential rationality  
of inclusivity insofar as pursuit of that project will enable  
us to finally assess its intrinsic merits.**

---

The difficulty with weighing the merits of this proposal is the difficulty in saying anything at all about the rationality of science. Meyer strongly recommends a "post-positivist" construal of science, largely, no doubt, because he views it as the correct construal of science, but not incidentally because it challenges the sort of a priori, ahistorical judgments on science as are typically leveled against inclusivity. The catch, of course, is that this also undercuts any a priori positive account of the rationality of inclusivity these authors might hope to proffer. All is not lost for the inclusivist, however. If there are no prior constraints on a proper scientific methodology, then shouldn't we allow inclusivist science its rightful day in the sun to see how it fairs?

This is a formidable argument. If we cannot rule out inclusivity a priori, then what grounds remain upon which to judge its rational merits? Presumably, only the head-to-head competition of these rival conceptions of science could reveal their respective strengths. Since MN eliminates this competition at its inception, it is literally pre-judicial, and thus irrational, to continue to regard exclusivistic science superior. Therefore, even if commitment to MN is not positively irrational, we may nonetheless hold out for the prudential rationality of inclusivity insofar as pursuit of that project will enable us to finally assess its intrinsic merits. Surely to disallow from the start this kind of healthy competition is the height of irrationality.

Thus, rather than arguing directly for the inherent rationality of theistic science, these authors challenge the very idea of *prior constraints* on a proper scientific methodology. This effectively shifts the burden of proof onto those who claim that inclusivity is not worth this kind of examination. Since, as Meyer supposes, the opponents of inclusivity cannot base their position on the very essence of science itself, the prejudicial spirit of exclusivity should be readily apparent. Yet, by adopting this strategy, these authors have significantly raised the stakes of the debate, for removing the notion of prior rational constraints might prevent us from speaking, except in relative terms, of the rationality of science at all. This move is doubly problematic for Moreland, et al. First, if our conception of a rational methodology depends on the consensus of the present scientific community, then inclusivity surely will not find favor. But, secondly, and far more significantly, we might expect a properly theistic science to be based on some objective notions of rationality. Thus, in the following section, I will examine this move with my response based on the belief that (1) there are - as Moreland, et al. surely *must recognize* - prior constraints on any legitimate scientific methodology, and (2) there are reasons based on these prior constraints - and largely ignored by these authors - which in fact do support commitment to MN. I do not intend to join those who argue that inclusivity is

itself irrational. I will simply maintain that the preponderance of evidence continues to favor commitment to MN.

### **Inclusivity does not Violate any Necessary and Prior Constraints on Science**

In the central section of his paper, Meyer shifts the burden of proof onto the exclusivist by arguing (1) that there are no criteria, definitive of science, which specifically exclude divine agency from consideration in a properly scientific account, and (2) there simply are no criteria which definitively demarcate science from nonscience. Meyer begins with this second claim, suggesting that, since no essential features distinguish science from nonscience, inclusivity cannot be disallowed on *prior* consideration. In case the reader remains unconvinced, he then argues that recent attempts to define science by means of some *particular* feature have either failed to capture all of science, or failed to exclude appeal to divine agency. Thus, Meyer argues not only that there are no necessary, a priori methodological constraints on science, but that all attempts to delineate these constraints that would rule out divine agency have failed the test of application. It is not clear whether the latter claim is meant to provide inductive support for the first or that he does not, nor intends for his audience to, take the first claim seriously. Thus he backs off the "in principle" objection to argue against demarcation criteria by surveying the various historical attempts. In either case, we are eventually led to consider the fall-back position which holds that it is MN itself which demarcates science from nonscience. Acknowledging this as a common response to inclusivity, he insists that it must be resisted as metaphysically gratuitous, question-begging, and banefully circular.

### **Absence of all *a priori* constraints on scientific practice**

Meyer begins by addressing the view that science involves essential features which the inclusivity principle violates. In this section, he argues against the notion of science as constituting a natural kind with an "eternal essence," in favor of the construal of science as a historically developing, contingent, and ever-changing product of particular human cultures and interests. Recent analysis characterizes science as largely involving change rather than stability, not only at the level of the substantive theories, but, most significantly, at the level of its very methods and aims. "Historically, attempts to find methodological 'invariants,'" Meyer affirms, "that provide a set of necessary and sufficient conditions for distinguishing true science from pseudoscience have failed."<sup>31</sup>

Therefore, Meyer fully endorses the conclusion of "most contemporary philosophers of science" that "the question 'What methods distinguish science from non-science?' [is] both intractable and uninteresting."<sup>32</sup> It is at this point that Meyer's indebtedness to the work of Larry Laudan is most evident, for it is Laudan who, in his most recent writings, argues that there are no methods or aims which necessarily delimit the bound of science. Laudan's argument is explicitly inductive: "We have...seen," he concludes after a historical survey, "that the aims of individual 'scientists' in one epoch are very different from those in another; it would be no more difficult to document the claim that the aims of the 'scientific' community change through time."<sup>33</sup> Laudan believes that this historical fact should be explained by adopting an antiessentialist view of science. Although he

resists the holistic picture of scientific change made famous by Kuhn (with its irrationalist overtones), Laudan claims that changes at the level of scientific theories may affect change in both the methods and aims of science; nothing is immune from revision. His "reticulated" model of scientific change holds that change in theories can affect changes in methods, and vice versa, and changes in methods can affect changes in aims, and vice versa. Instead of a hierarchy, with the *aims* of science prescribing both the proper methods and, by extension, the substantive content of scientific theories, there is a reciprocal relationship with a feedback loop such that the very aims of science are subject to radical revision in light of changes in substantive beliefs and available methods.

---

**Although [Meyer] rejects the possibility of  
"a negative a priori case" against inclusivity, he does not appear  
interested in rejecting the possibility of an a posteriori case *for inclusivity*.**

---

Laudan's reticulated model of science suits Meyer well for it enables him to support a nonessentialist construal of science, such that theistic science does not face antecedent elimination, while simultaneously providing a framework for maintaining the propriety of a particular view of science. There is, however, a certain ambivalence in Meyer's remarks, for although he does maintain that "... no agreed criteria exist by which to judge" whether or not a certain theory is scientific, he disavows interest in "seeking to establish the impossibility of demarcation in general."<sup>34</sup> Fully endorsing a nonessentialist view of science does raise significant concerns, such as those betrayed in the following comments:

To say that some discipline or activity qualifies as scientific is to imply the existence of a standard by which the scientific status of an activity or discipline can be assessed or adjudicated. If no such standard presently exists, then nothing positive (or negative) can be said about the scientific status of intelligent design (*or any other theory* for that matter).<sup>35</sup>

Does Meyer really mean to suggest that just any conjecture might count as science? If we read the notion of a theory broadly enough, this would surely place him in an uncomfortable position. Although he does suppose that we can recognize paradigmatic instances of science, he insists that the absence of "an agreed standard as to what constitutes the properly scientific"<sup>36</sup> prevents a prior exclusion of any account. Yet Meyer is careful to disavow "methodological anarchism."<sup>37</sup> He does not wish to open the door of scientific legitimacy to "intelligent design," at the cost of granting legitimacy to any conceivable account.

His reluctance, I suspect, stems from his unwillingness to consider science as being wholly malleable. Thus, although he rejects the possibility of "a negative a priori case" against inclusivity, he does not appear interested in rejecting the possibility of an a posteriori case *for* inclusivity. In fact, Meyer does not fully sanction Laudan's construal of science. In the course of his discussion, Meyer allows that we might not want to call

"design" science after all: "What we want to know is not whether a theory is scientific but whether a theory is true or false, well confirmed or not, worthy of our belief or not."<sup>38</sup> This comment evidences a deeply significant difference between his "nonessentialism" and Laudan's.

---

**[Meyer's concern with] the truth of a hypothesis or theory, rather than whether we call it "science," suggests a significant disanalogy between his nonessentialism and the nonessentialism of an antirealist like Laudan.**

---

This comment on the ultimate interest in the *truth* of a hypothesis or theory, rather than whether we call it "science," suggests a significant disanalogy between his nonessentialism and the nonessentialism of an antirealist like Laudan. One way to understand the significance of the difference between Meyer and Laudan on this point is to focus on the question of *why* they each consider the demarcation question not only intractable, but also *uninteresting*. For Laudan, an antirealist who considers science an impotent means for attaining knowledge of reality, the question of demarcation loses import when it ceases to delineate claims of particular epistemic significance.

[L]eaving aside the fact that agreement was lacking about precisely what the scientific method was, there was no very good reason as yet to prefer any one of the proposed 'scientific methods' to any purportedly 'non-scientific' ones, since no one had managed to show either that any of the candidate 'scientific methods' qualified them as 'knowledge' (in the traditional sense of the term) or, even more minimally, that those methods were epistemically superior to their rivals.<sup>39</sup>

While Laudan recognizes that scientists regularly speak in terms of knowledge, truth, and reality, he nonetheless argues that truth as a goal of any human endeavor is either unachievable or else unrecognizable. If so, then it can serve no useful purpose as the goal of the enterprise, nor can it provide the grounds for recommending a particular methodology. Since Laudan rejects the notion that truth constitutes a coherent goal of science, it cannot be viewed as a distinctive goal. Therefore, the task of separating the scientific from the nonscientific on epistemic grounds is rendered wholly impertinent.

For Meyer, a realist in both the sciences and theology, the distinction also lacks significance for lack of *epistemic* significance, but for a very different reason. In his view, *both* science and nonscience can deliver the epistemic goods. Meyer is right to suppose that "one does not need to adopt a relativistic or antirealist view of science to accept what Laudan and others say about the demarcation problem. Indeed, the two positions are logically unrelated."<sup>40</sup> That is, one does not have to be a relativist or antirealist to accept that historical attempts to demarcate science (knowledge) from nonscience (opinion) have failed. Yet, this difference is absolutely crucial for the

assessment of science as governed by fixed constraints, because from the antirealist perspective, science may ultimately take any imaginable form (even if moving from its present to this latter state in incremental, and individually justified, steps).<sup>41</sup> Since Laudan rejects the notion that truth is an achievable goal to be served by scientific methods, then the only constraints on scientific method are those provided by those "ends which we [currently] find cognitively important."<sup>42</sup>

For Meyer, on the other hand, the nature of science is governed by its aim toward truth - only truth-conducive practices can be considered scientific. For the realist, then, *certain external constraints do bear down upon the aim, and thus the methods, of science*. Either truth, or representation of reality, are goals of science, or they are not. If they are, as Meyer maintains (and why not, if accessible), then they will strongly determine what types of activities properly fall under the rubric of "scientific" - a chemical analysis of tea leaves does; reading tea leaves does not. The relevant difference between these two actions is their effectiveness in conveying the nature of the world. We regard the former as science, and the latter as superstition, not merely based on its reference to occult qualities, but because of their respective abilities to track truth.

One might respond to Laudan by questioning his claim that both the methods and the aims have undergone the sort of substantive change he claims.<sup>43</sup> The question of immediate concern, however, is where Meyer's analysis of science leaves the overall framework of his argument. Invoking a nonessentialist view of science does open the door for inclusivity. Furthermore, his commitment to realism, although providing important methodological constraints, does not dictate particular a priori restrictions on science; it may well warrant inclusivity. Nonetheless, Meyer is committed to the notion of discernible methodological criteria, viz. those operational strictures which in fact are, and are understood to be, truth-conducive. For Meyer, knowledge (traditionally understood) and understanding (of a mind-independent reality) provide the fixed and stable goals of science, even if these *goals* do not distinguish science from other human endeavors. So the question remains: Is there a methodology both *distinctive* to the sciences while justified according to this inclusive goal of truth? In particular, even if inclusivity, as a methodological principle, cannot be ruled out in advance, it remains to be seen how well it serves the aim of providing an accurate understanding of reality. Surely, for the Christian, divine agency plays a central role in a proper overall world view, yet it remains to be seen whether *reference* to agency in the course of scientific theorizing furthers our understanding the structure of nature, and ultimately the relationships among all the components of reality - natural and non-natural. Since MN does not necessarily impede the quest for truth, there is no reason to reject it out of hand as providing a proper constraint on the discipline of science. If, in fact, it proves positively beneficial to the overall goal of knowledge, then we will have reason to suppose that it ought to be retained.

**There are no methodological criteria which exclude appeal to divine agency, which do not also exclude examples of good science.**

One way of preserving a distinctive domain for science is to argue that the goals of science, whether these are regarded as fixed or merely conventional, place methodological constraints on science - constraints which effectively exclude reference to divine agency. In particular, if the aim of science is to gain knowledge of reality, and if this knowledge is attainable only by means of procedures which do not apply to our study of the nonnatural, then reference to divine agency would be rendered beyond the bounds of good science. Thus, following Laudan's analysis, Meyer focuses attention on those attempts to distinguish between science and nonscience by the means of the method by which science must proceed. Meyer considers whether what he terms "design"<sup>44</sup> or theories of direct creation "(a) do not explain by reference to natural law, (b) invoke unobservables, (c) are not testable, (d) do not make predictions, (e) are not falsifiable, (f) provide no mechanisms, (g) are not tentative, and (h) have no problem-solving capability."<sup>45</sup> In an ultimately, and admittedly, futile attempt to inductively establish a negative universal,<sup>46</sup> he argues specifically against (a) - (c), and in general terms against (d) - (h). Meyer maintains that when such criteria are leveled against design, they either (1) fail to exclude design, (2) exclude paradigmatically good science (specifically evolutionary theory), or (3) beg the question.

---

**If the aim of science is to gain knowledge of reality,  
and if this knowledge is attainable only by means of procedures  
which do not apply to our study of the nonnatural, then reference  
to divine agency would be rendered  
beyond the bounds of good science.**

---

The following analysis will focus on this third claim, which Meyer identifies as the central issue in this dispute.<sup>47</sup> We have argued above that the aim of science is not simply to gain understanding of the natural order, or an account of natural processes, but to gain an understanding of the natural order, or account of natural processes in terms of further natural phenomena. If various of these criteria rule out reference to agency just because it does not make an appeal to strictly natural phenomena, doesn't that just beg the question against inclusivity? "Simply asserting that such [immaterial] entities [such as creative intelligence, mind, mental action, divine action, or intelligent design] may not be considered, whatever the empirical justification for their postulation, clearly does not constitute a justification for an exclusively naturalistic definition of science."<sup>48</sup>

Surely the point at issue is whether there are independent and metaphysically neutral grounds for disqualifying theories that invoke nonnaturalistic events - such as instances of agency or intelligent design. To assert that such theories are not scientific because they are not naturalistic simply assumes the point at issue. "What noncircular reason can be given for this assertion? What independent criterion of method demonstrates the inferior scientific status of nonnaturalistic explanation?"<sup>49</sup>

Meyer is correct to point out that support for several of these criteria rests on the assumption of MN; some of these specific criteria simply function as corollaries to this

broader methodological constraint. Therefore, one cannot justify appeal to the ancillary criterion by appeal to MN, if it is the warrant for MN that is ultimately in question.

---

**It is a straightforward appeal to instrumental rationality which grounds our commitment to MN; MN has proven amply able to serve the goals of science.**

---

So, are there *independent* grounds for MN, or do those scientists committed to MN "simply assert" this methodological constraint? That the answer cannot be determined a priori, based on advance knowledge of the essence of science, does not rule out the possibility of an empirical and broadly inductive response. That answer, in short, is that the goals of science are as we have suggested - to provide a naturalistic explanation of the phenomena of our experience, and it is a straightforward appeal to instrumental rationality which grounds our commitment to MN; MN has proven amply able to serve the goals of science. Of course, as we have seen, this begs the further question concerning the adoption of these goals. Again, in the absence of a rationalist insight into the essence of the enterprise, how does one go about deciding what the proper goals of a discipline like science should be?

First, it must be recognized that since science is a human invention and a wholly human endeavor, its goals will have been determined conventionally. That is, these goals are not transcendent, handed down from above, discernible by simply thinking about the practice of science. The goals of science are determined by fallible human participants. Since scientific practice has developed and matured in historically specific world views, with specific socio-cultural pressures, by specific individuals and cultures with specific values and interests, we must expect a significant element of subjectivity, contingency, and historicity embedded in them.

Nevertheless, even on this historicist construal, there remains something enduring amid the flux, namely the ongoing quest for an understanding of reality. There is a very important sense in which the goals of science, whether fixed or in flux, are not purely conventional or arbitrary human constructs. They are discovered, i.e., the goals humans propose have been *discovered to be attainable* by having been *discovered to have been attained*. If a particular goal, viz. to gain an understanding of natural phenomena strictly in terms of natural phenomena, has been deemed significant (a contingent matter), and yet found to have been achieved, then that goal should be regarded neither as "simply [i.e., arbitrarily] asserted," nor capriciously forsaken. Furthermore, examining the actual practice of science might enable us to discern the means by which to accomplish that end. Certainly, throughout the history of science, there has been a disparity in self-understanding of how scientists have carried out their activity; there appears, as Laudan insists, a strong element of contingency at the methodological level.<sup>50</sup> Nonetheless, recognizing historical contingency of these methodological commitments would not

prevent their *validation* by their service to such an achievable and manifestly significant goal. Therefore, absence of a prior, rationalist justification still leaves open the possibility of a retroactive, empirical vindication of both the aim and methods of science.

---

**There is a very important sense in which the  
goals of science, whether fixed or in flux,  
are not purely conventional or arbitrary human constructs.**

---

Does this approach avoid the charge of circularity? Not entirely, for ultimately this argument rests on the claim that science *has been successful* in accomplishing the goal of understanding natural phenomena. Why think that we can comprehend reality, i.e., why suppose that this goal is fulfillable? Because we have, in some limited fashion, actually fulfilled it. Of course, it is precisely on this point that a skeptic like Laudan balks, and I doubt that there is a noncircular argument available to drive the skeptic from this view. So, ultimately this position is dependent on the belief that the enterprise has enjoyed some limited success in accomplishing the end toward which it aims. But this is not a circle which should worry Meyer. He is, I take it, a scientific realist, willing to assign a degree of reality to those natural explanations by which scientists explain the phenomena of experience. To the extent to which he recognizes the, albeit limited, success of science, he must pay some heed to whatever method has made possible that achievement. What then of MN? I take it that the defense of MN rests on the belief that restricting science to naturalistic explanations has (historically) contributed to the success of science in providing knowledge of natural phenomena.<sup>51</sup> It could have been that we would have gained an understanding of natural phenomena (i.e., known the truth about them) by appealing straightaway to divine agency, or readily countenancing nonnatural accounts; God may have regularly acted directly or immediately in the natural domain. But, as it turns out, for various political, philosophical, theological, and sociological reasons, scientists tenaciously seek fully mechanistic accounts, a methodological choice which has proven remarkably fruitful.

Does Meyer really wish to deny this point? I don't think so. His position, as I understand it, is not that MN has *no* authority in governing scientific practice, but rather that the (Christian) scientist, *qua* scientist, should not give it *final* authority. That is, there will be a point where strictly natural science appears unable to account for some phenomena, and this is precisely that point at which appeal to divine agency is deemed a plausible scientific response. "Intelligent design can be offered...as a necessary or best causal explanation *only* when naturalistic processes seem incapable of producing the *explanandum* effect, and when intelligence is known to be capable of producing it and thought to be more likely to have produced it."<sup>52</sup> Of course, from the Christian perspective, intelligence can produce any explanandum effect. So the question concerns the weighted likelihood of "the two possible types of causes: mechanistic [or] intelligent."<sup>53</sup> In this event, as Meyer himself warns, "if competing hypotheses are

eliminated before they are evaluated, remaining theories may acquire an undeserved dominance."<sup>54</sup> Thus, the sciences ought to grant as much initial credence to intelligence as a purely natural mechanism.

---

**There will be a point where strictly natural science appears unable to account for some phenomena, and this is precisely that point at which appeal to divine agency is deemed a plausible scientific response.**

---

We have cited this last point repeatedly, because the argument for full and fair consideration of all competitors is absolutely crucial; it does, however, cut both ways. To render this judgment, a scientist must explore *all available natural accounts* in order to gain a fair reading of the prospect for the success of each. Different natural hypotheses will carry different probability assignments, and so will compare more or less favorably with appeal to agency, based on its "theological plausibility" for the given case.<sup>55</sup> Even for the inclusivist, then, at some juncture a comparison must be made between the best *available* natural account, and appeal to divine agency as the nonmediated cause of the phenomena. That is, in order for this analysis to reveal the best overall theory, the comparison must be between the best account restricted, noninclusive "science" has to offer and the best direct interventionist "theological" account.<sup>56</sup>

---

**Constraining scientists forces them to persist in their investigations into the natural causes of natural phenomena in such a manner as to effectively service the goal of science.**

---

Yet, for this comparison to carry maximal epistemic authority, we must have full confidence that natural science has in fact proffered the strongest natural account. Traditionally, this confidence has been born along on the steadfast devotion of the scientific community to relentlessly seek and evaluate natural, and only natural, explanations. The tenacity attached to this methodological constraint has ensured that any plausible natural account will have been given due consideration. It has also, in fact, served to uncover the nature of reality - the sanction of inclusivity stems, then, from the belief that science has established a notable track-record for providing insight into reality *precisely when constrained by MN*. Science has enabled us to make progress in our understanding and comprehension of the nature of reality, and MN must be considered a central part of that story.<sup>57</sup>

What Meyer needs here is an argument to the effect that the Christian goal of attaining an overall understanding of reality is not served by retaining MN. Unfortunately, there doesn't seem to be evidence available to support this contention.<sup>58</sup> On the contrary, the accuracy of our understanding of the created order has been vastly enhanced by so delimiting the explanatory resources of the scientist. Constraining scientists forces them to persist in their investigations into the natural causes of natural phenomena in such a manner as to effectively service the goal of science - understanding reality, as far as possible, in natural terms. Herein lies the intrinsic value of a purely natural science. In this respect, the competition between these rival accounts has already been waged with the results decidedly in favor of exclusivity. Further, since natural science should not make exclusive claims to truth, revisiting this old battle is neither necessary nor promising for gaining a full understanding the nature of reality.

---

**Not only has exclusivity served to uncover  
the structure of the natural world, it has  
revealed the limitations of the best natural accounts.**

---

As we have seen, exclusivity has also worked to promote the goal of achieving an unrestricted understanding of reality by seeing to it that any nonnatural account gain ascendancy over its *strongest competitor*. Thus, not only has exclusivity served to uncover the structure of the natural world, it has revealed the limitations of the best natural accounts. When one reads some other chapters in *The Creation Hypothesis*, one finds that the arguments for design are clearly dependent on the evident inability of science, restricted as it is to providing strictly natural accounts, to explain certain phenomena. Herein lies the instrumental value of a distinct, purely natural science.<sup>59</sup> Natural theology, and our overall goal of understanding reality, are served in a crucial manner by insisting that science resolutely avoid appeal to divine agency.<sup>60</sup>

In fact, the present argument can be strengthened by maintaining that the scientist must be granted epistemic license (in the form of instrumental rationality) to explore natural accounts, even when they appear less promising than nonnatural accounts. If *scientific rationality allows* for appeal to divine agency, then there will be occasions when, for the Christian at least, appeal to divine agency will provide a more promising account than any available natural account. In that case, the rational course to take, *as a scientist*, would be to leave aside the search for natural processes, and pursue a nonnatural explanation. If, then, science merely *permits* appeal to divine agency, then scientific rationality will *compel* appeal to that account. But, again, history shows that a stubborn commitment to MN has resulted in the discovery of natural accounts which have gained wide acceptance, even among Christians. Where the decided implausibility of the natural account would have forced the scientific community to affirm immediate divine agency, *if that were scientifically permissible*, MN served our interest in truth. The methodological constraint rationally enables, even encourages, pursuit of a largely

implausible natural explanation, if, that is, it were the most promising natural explanation. Occasionally, this strategic commitment pays dividends in our understanding of reality, a payoff that would have remained quite out of reach if science itself had not been constrained. Christians, just as anyone with an interest in truth, need a haven for the rational pursuit of lines of inquiry which may not, but then again just might, develop in a way that ultimately renders them rationally preferable.

### **Taking MN Seriously**

The criticisms of the principle of inclusivity given above intimate reasons for remaining committed to MN. Fundamentally, that reason involves the availability of the best competing explanations. If, as we have assumed, a form of abductive reasoning characterizes the sciences, or at least a historical science which addresses questions of origins, then this procedure will be most effective when it examines the respective merits of the best hypotheses available.

---

### **Ultimately, natural science faces a non-natural competitor.**

---

Unless one has prior reason to suppose that natural science will provide the final word on the nature of reality, that is, that the scientific hypothesis deemed strongest must be considered best overall, one should expect the strongest scientific hypothesis to ultimately confront nonscientific competitors. Ultimately, natural science faces a nonnatural competitor. It is, as Dembski argues, "...as soon as empirical resources are exhausted, [that] naturalistic explanation loses its monopoly as the only legitimate explanatory strategy for science."<sup>61</sup> This seems quite right, except for these last two words. Is it the best strategy to allow *science* to appeal to divine agency? Again, as Dembski rightly insists, we may appeal to God, not to "mask ignorance of natural causes," but because "we have exhausted the full range of possible natural causes."<sup>62</sup> However, the fundamental worry, addressed by MN, concerns the task of determining *if* we have exhausted the full range of possible natural causes. History intimates that only when unreserved effort is expended within the scientific community to provide the best natural account can there be any assurance that its full resources will have been exhausted; preserving the disciplinary boundaries by means of a proscribed methodology has been quite successful in producing the best natural account. Sometimes that account proves correct, i.e., preferable to direct appeal to divine agency; sometimes, as is inevitable in origins research, it does not. When it does not, however, confidence in the rival theological account is grounded, in part, on the belief that it has been deemed superior to the best natural account currently available.

If this line of defense is sound, then, the mere fact that there are no direct a priori grounds for rejecting inclusivity does not mean there are no grounds at all; the overall interest in

truth, a fixed and apparently achievable goal of all scientists, especially Christian, is best served when natural science is constrained by MN.

---

### Notes

<sup>1</sup>J. P. Moreland, "Conceptual Problems and the Scientific Status of Creation Science," *Perspectives on Science and Christian Faith*, *Journal of the American Scientific Affiliation*, 46 (March 1994): 2-13; see also, Stephen C. Meyer, "The Use and Abuse of Philosophy of Science: A Response to Moreland," *Ibid.*: 14-18.

<sup>2</sup>J. P. Moreland, Ed., *The Creation Hypothesis: Scientific Evidence of an Intelligent Designer*, (Downers Grove, IL: InterVarsity Press, 1994), 55.

<sup>3</sup>*Ibid.*, 12-13.

<sup>4</sup>*Ibid.*, 13.

<sup>5</sup>*Ibid.*, 46.

<sup>6</sup>"...those hoping to find a post-positivist philosophy of science," he charges, "to assist them in defining creationist theories out of existence may have to look long and hard." Meyer, "The Use and Abuse of Philosophy of Science," 16.

<sup>7</sup>Howard J. Van Till, "Special Creationism in Designer Clothing: A Response to *The Creation Hypothesis*," *Perspectives* 47 (June 1995): 127-8.

<sup>8</sup>Note that MN, even broadly conceived, is distinct from *metaphysical* naturalism. The latter stipulates that there is no nonnatural, or supernatural, dimension to reality; the former only requires of science that it appeal only to entities, processes, relationships, mechanisms, etc. which are naturalistic in origin, leaving open the possibility of other areas of human inquiry and experience involving the nonnatural.

<sup>9</sup>Ernan McMullin utilizes this distinction in "Plantinga's Defense of Special Creation," *Christian Scholars Review* 21 (September 1991): 57-58.

<sup>10</sup>Meyer, "The Use and Abuse of Philosophy of Science," 17, original emphasis.

<sup>11</sup>*Ibid.*

<sup>12</sup>Dembski says: "The prejudice is this: that naturalistic explanation is somehow intrinsically better than nonnaturalistic explanation. This is certainly a value judgment. I call it a prejudice because its effect on inquiry is limiting and destructive." J. P. Moreland, Ed., *The Creation Hypothesis*, 131. Notice the extent to which this analysis requires not only commitment to MN, but to some form of scientism as well.

<sup>13</sup>Moreland in *The Creation Hypothesis* ascribes to the notion that attempts to defend MN are at heart defense of some form of scientism. "Now this is clearly the explicit cognitive goal in the MN of de Vries and Van Till, however laudable their motives and intentions are on other grounds" (pp. 50-51). But, "Science has never exhausted the rational, nor has science ever been a discipline or set of disciplines intellectually isolated from direct interaction, mutual reinforcement or competition from *other* fields of study, especially philosophy and theology" (p. 51, my emphasis, intended to highlight the tacit recognition that NT should not be assimilated to NS). Here, again, we find Moreland strapping the defender of MN with scientism, a view to which the proponent need not be committed.

<sup>14</sup>Including "weak scientism," the view that "scientific propositions have greater cognitive authority than those of other fields" (p. 16). "Strong scientism is the view that some proposition or theory is true or rational to believe if and only if it is a scientific proposition or theory - that is, if and only if it is a well-established scientific proposition or theory, which in turn depends upon its having been successfully formed, tested and used according to appropriate scientific methodology. There are no truths apart from scientific truths, and even if there were, there would be no reason whatever to believe them" (p. 14).

<sup>15</sup>Phillip Johnson considers the "power of scientific naturalism in the academic world" to be "so intimidating  $\text{\AA}8^{\downarrow}$   $\text{\AA}$  that hardly anyone is willing to challenge it" (*Reason in the Balance: The Case Against Naturalism in Science, Law & Education* [Downers Grove, IL: InterVarsity Press, 1995], 97). But challenge it we can, and (we philosophers!) *must*, without presuming upon natural science itself. As I see it, the proper philosophical response to the apparent prevalence of metaphysical naturalism is to challenge the mistaken philosophical interpretation of science, rather than prescribing a revised set of rules for conducting research. Ironically, these inclusivists have adopted a strategy in keeping with modernity and a positivist spirit, pronouncing to scientists the demands of rationality itself on the manner in which they conduct their activities.

<sup>16</sup>The aim of science is often spoken of in terms of prediction and control. There are many crucial issues which ride on the manner in which one views the scientific enterprise. I do not intend to dispute the claim that scientists are, often centrally, interested in prediction and control, but only intend to suggest that those interests are best served by achieving the sort of accurate understanding of natural phenomena necessary to facilitate these other concerns.

<sup>17</sup>Another way to approach this topic is to assign to science the task of determining just how it is that God works in the created order. As Pearcey and Thaxton argue in *The Soul of Science: Christian Faith and Natural Philosophy* (Wheaton, IL: Crossway Books, 1994), this debate occurred primarily among Christian scientists in the last several hundred years, a debate that has resulted in our present understanding of science in largely mechanistic terms. The materialistic mechanistic world view predominant in science is a philosophical extension of an older, nonmaterialistic form of mechanism, evident today in the writings of theistic evolutionists.

<sup>18</sup>One need not suppose that if science is not taken as providing a complete account of reality, it thereby fails to meet its goal of truth; to suppose so would be to commit the "no truth but the whole truth" fallacy.

<sup>19</sup>Meyer, 17.

<sup>20</sup>Van Till, in "Special Creationism," 127-8. Although Van Till prudently shies from discussion of MN, he offers these comments as characterizing the narrow construal of "naturalistic." He goes on to say: "Nor is the ultimate source of its capacities for behaving as it does, or its purpose in the larger context of all reality, or its relation to divine action or intention [specified or implied]." He hereby rightly allows ample room for a "design hypothesis" which accounts for the remarkable effectiveness of these natural phenomena.

<sup>21</sup>As Meyer rightly reminds us:

The deployment of flawed or metaphysically tendentious demarcation arguments against legitimate theoretical contenders has produced an unjustified confidence in the epistemic standing of much evolutionary dogma, including "the fact of evolution" defined as common descent. If competing hypotheses are eliminated before they are evaluated, remaining theories may acquire an undeserved dominance (p. 100).

<sup>22</sup>James Robert Brown offers an extremely helpful discussion of the role of social factors in science, especially, on this point, in *The Rational and the Social* (New York: Routledge, 1989), 155ff., and again, 176ff.

<sup>23</sup>Does there come a point at which the scientific support is so weak that a hypothesis ought to be ruled "unscientific," simply for playing the game so badly? I would think so. This sort of challenge, however, which may figure prominently in resistance to "Creationism" in public schools, is not where these authors choose to meet the attack.

<sup>24</sup>Moreland, Ed., *The Creation Hypothesis*, 54.

<sup>25</sup>*Ibid.*, 68.

<sup>26</sup>*Ibid.*

<sup>27</sup>Maybe it should simply be considered the goal of science "to provide a naturalistic account as far as one can," leaving open the question of how far this might take one. This would allow both the theist and the thoroughgoing naturalist to engage in the same activity, in pursuit of the same goal, with differing expectations concerning the unexplained remainder once that goal has been fulfilled. Kitcher, for instance, maintains that "...the cognitive goal of science is to attain significant truth...insofar as it is possible for beings with our limitations to do so" (Kitcher, *The Advancement of Science: Science without Legend, Objectivity without Illusions* [New York: Oxford University Press, 1993], 157).

<sup>28</sup>In the context of the philosophy of mind, John R. Searle (in *The Rediscovery of Mind* [Cambridge, MA: A Bradford Book, 1994], 24) provides the following sound methodological advice: "But we should never forget who we are; and for such as us, it is a mistake to assume that everything that exists is comprehensible to our brains. Of course, methodologically we have to act as if we could understand everything, because there is no way of knowing what we can't: to know the limits of knowledge, we would have to know both sides of the limit."

<sup>29</sup>Meyer, 17.

<sup>30</sup>Moreland, "Conceptual Problems and the Scientific Status of Creation Science," 5.

<sup>31</sup>Moreland, Ed., *The Creation Hypothesis*, 72.

<sup>32</sup>*Ibid.*, 75.

<sup>33</sup>Larry Laudan, "Progress or Rationality? The Prospects for Normative Naturalism," *American Philosophical Quarterly*, 24 (Jan. 1987): 23.

<sup>34</sup>Moreland, Ed., *The Creation Hypothesis*, 75.

<sup>35</sup>*Ibid.*, 98, my emphasis.

<sup>36</sup>*Ibid.*

<sup>37</sup>*Ibid.*, 100.

<sup>38</sup>*Ibid.*, 99.

<sup>39</sup>*Ibid.*, 342.

<sup>40</sup>*Ibid.*, 76.

<sup>41</sup>Even though Laudan cannot be labeled an anarchist, his reticulated model does not have the resources to prevent science from eventually becoming unrecognizable by present lights. In the absence of any external constraints, his views on (scientific) rationality resembles Richard Rorty's ethnocentrism. Ernan McMullin comments on this possibility in, "The Shaping of Scientific Rationality: Construction and Constraint," (in *Construction and Constraint* [Notre Dame, IN: University of Notre Dame Press, 1989], 18). Rorty describes the difference between his ethnocentrism and relativism in "Solidarity or Objectivity?" (in *Objectivity, Relativism and Truth* [New York: Cambridge University Press: 1991], 21-34).

<sup>42</sup>Laudan's reticulated model allows that not just any goal will qualify at a given time, for some goals, according to our current scientific theories, are not realizable. Along this vein, Laudan would surely resist the inclusivity principle insofar as it fails to move us

closer "to a realization of ends that most of us [presently happen to] hold to be important and worthwhile." (Larry Laudan, "Progress or Rationality? The Prospects for Normative Naturalism," *American Philosophical Quarterly*, 24 [Jan. 1987]: 28). "[A]s soon as there is a record of people whose behavior has been largely successful at realizing many of the cognitive aims which we hold dear, then a proposed methodology of science cannot afford to ignore that record" (Ibid.).

<sup>43</sup>See James Robert Brown, in *The Rational and the Social* (London and New York: Routledge, 1989), 117ff., for a penetrating critique of this sort. Philip Kitcher argues that scientists have advocated different aims, but these are to only be considered different "derivative" aims (Kitcher, *The Advancement of Science*, 159).

<sup>44</sup>As we shall see, this language suggests a false dilemma which serves to obscure the alternative advocated in this present account.

<sup>45</sup>Moreland, Ed., *The Creation Hypothesis*, 77.

<sup>46</sup>"Since some may yet doubt that demarcation always fails, the following section will examine some of the specific demarcation arguments that have been deployed against design by proponents of descent" (Ibid., 76-77).

<sup>47</sup>Ibid., 87.

<sup>48</sup>Ibid.

<sup>49</sup>Ibid., 82.

<sup>50</sup>Is Laudan right in identifying a diversity of methods in the history of science? Maybe, but even so, this would not entail a diversity of aims, for it is not unreasonable to expect that scientists will have learned something about how to best go about the task of uncovering the underlying structures of reality.

<sup>51</sup>As Wesley Salmon points out in the opening paragraphs of his *Scientific Explanation and the Causal Structure of the World* (Princeton, NJ: Princeton University Press, 1984), "Not only do we desire to know *what* happens; *we also what to understand why*. Moreover, it is widely acknowledged today that science *can* provide explanations of natural phenomena; indeed, to many philosophers and scientists, this is the primary goal of scientific activity" (p. 3). Salmon proceeds to give a "causal-mechanical" account of science, maintaining that "scientific explanation is designed to provide understanding, and such understanding results from *knowing how thing work*" (p. 240, original emphasis). It is by no means Salmon's belief that this account of science is as it must inevitably be, for he disavows commitment to the necessity or even universality of his account. "I have not been trying to lay down conditions that must be satisfied by all admissible scientific explanations in all possible worlds," he insists in his concluding remarks. "My aim has been to articulate contingent features of scientific explanations in this world as we presently conceive it" (p. 278). Nevertheless, the remarkable success of

science in fulfilling these goals warrants granting the causal/mechanical model significant, if ultimately limited, application (pp. 237, 240).

<sup>52</sup>Moreland, Ed., *The Creation Hypothesis*, 97, first emphasis mine.

<sup>53</sup>*Ibid.*, 87-88.

<sup>54</sup>*Ibid.*, 100.

<sup>55</sup>*Ibid.*, 97.

<sup>56</sup>The interesting cases would be those in which the scientist concludes that the phenomena in question is simply the result of randomness or chance. By requiring both "empirical warrant" and "theological plausibility," Meyer seems to recognize the possibility that the lack of a naturalistic explanation does not of itself justify appeal to divine agency. The preferred hypothesis, in such a case, may be the null hypothesis (we don't want to rule the evolutionary account out by default!).

<sup>57</sup>Richard S. Westfall, in his book *The Construction of Modern Science: Mechanisms and Mechanics* (Cambridge: Cambridge University Press, 1971), documents how seventeenth-century science represents the movement away from appeal to occult and mysterious forces with which the universe was thought to be filled, toward what he identifies as the mechanical philosophy. "As he [Boyle] summed it up, the mechanical philosophy traces all natural phenomena to the 'two catholic principles,' matter and motion. He might have added that by 'matter' the mechanical philosophy means qualitatively neutral stuff, shorn of every active principle and of every vestige of perception. Whatever the crudities of the seventeenth century's conception of nature, the rigid exclusion of the psychic from physical nature has remained as its permanent legacy" (p. 41). Commenting on his own "mechanical philosophy," Wesley Salmon writes, "We have to change our mechanistic view from the crude atomism that recognizes only the motions of material particles in the void to a conception that admits such nonmaterial entities as fields, but for all of that, it is still a mechanistic world view. Materialism is untenable, but the mechanical philosophy, I believe, remains viable" (in *Scientific Explanation and the Causal Structure of the World*, 241). For a fine treatment on the complex interface between the mechanical philosophy and the Christian faith, see the excellent discussion in Colin A. Russell's *Cross-currents: Interactions Between Science & Faith* (Grand Rapids, MI: Eerdmann's Publishing Co., 1985), especially chapter 4.

<sup>58</sup>In fact, that evidence may be forthcoming, as Meyer, Dembski, and Paul Nelson collaborate on a project which seeks to apply the principles of Theistic Science. This work may well command the sort of respect which not only changes our substantive views on the natural world, but also precipitates the sort of revolution foreshadowed in the writings we have been examining.

<sup>59</sup>In his contribution in *The Creation Hypothesis*, Hugh Ross makes this observation:

The more astronomers learn about the origin and development of the universe, the more evidence they accumulate for the existence of God, and for the God of the Bible in particular. Ironically, those who fought hardest against God as the explanation for the cosmos often were the ones whose work provided the most powerful new evidence for him today, with the measuring of the creation has come the scientific equipment to make a positive identification of the Creator (p. 171, my emphasis).

Although there is indeed irony in this situation, there is no irony in the suggestion that commitment to MN would have the same effect of providing "the most powerful evidence" for a Creator today.

<sup>60</sup>This suggests that the real value of Moreland and Meyer's argument may lie in the poignancy of their call for Christian scientists to be very clear and articulate concerning the exact limitations of the best scientific account. Christians involved in science need to sort out and delineate the extent to which the evidence supports the various elements of a particular scientific theory. The weaknesses of that account should be frankly acknowledged by the scientist, whether Christian or not. The evidence will underdetermine any scientific account, and it may fall to the particular province of the Christian to highlight the shortcoming of the overall best scientific account, effectively limiting the pretense of naturalistic science.

<sup>61</sup>Moreland, Ed., *The Creation Hypothesis*, 132.

<sup>62</sup>Ibid.

---