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# SHOULD RELIGION SHAPE SCIENCE?

Mikael Stenmark

Alvin Plantinga has recently claimed that science is not religiously neutral because it often contains a naturalist bias. He argues that Christians should respond by developing their own kind of science (an "Augustinian science"), a science which is shaped by Christian beliefs and values. I agree with Plantinga that we can find contemporary scientists who presuppose metaphysical naturalism in their scientific reasoning, but I shall also try to show that the reasons Plantinga gives why Christians should respond by developing their own kind of science are not convincing. Instead I argue that the best strategy for Christians and other theists to adopt is to expose naturalist bias in contemporary science and to maintain that religions or ideologies ought not to be included among the grounds for accepting or rejecting theories in science. Moreover, an alternative to both Augustinian science and "Duhemian science" is developed. I also indicate that some interesting parallels could be drawn between Plantinga and his idea of an Augustinian science and those who advocate a science shaped by feminism, Islam, or Marxism.

A number of influential thinkers working mainly within the reformed tradition of Christianity have recently raised serious objections against the way science is conducted and against the bias they think exists within the academy against Christian beliefs and values and in favor of what is called "naturalism," "secular humanism," "secularism" or "nonbelief."<sup>1</sup> This criticism has also led some of them to propose an alternative way of doing science, a so-called "faith-informed science," "theistic science" or "Augustinian science." In this article I shall engage in dialogue with one of these thinkers, Alvin Plantinga. I shall examine critically his claims that science is not religiously neutral because we can find a naturalist bias in the work of contemporary scientists and that Christians should in response develop a science that is shaped by their own religious commitments.

## *I. Naturalist Bias in Contemporary Science*

According to Plantinga a view that has been popular ever since the Enlightenment is that "science (at least when properly pursued) is a cool, reasoned, wholly dispassionate attempt to figure out the truth about ourselves and our world, entirely independent of ideology, or moral convictions, or religious or theological commitments."<sup>2</sup> But although this view has received widespread acceptance, he thinks that it is wrong. The truth



is instead that science is not religiously neutral. This in a way comes as no surprise for Plantinga because he, following Augustine, believes that human history is the arena of a great struggle between the City of God (*Civitas Dei*) and the City of the World (*Civitas Mundi*), between "the Christian community and the forces of unbelief."<sup>3</sup> Therefore, science, just as any other human endeavor, cannot be expected to be wholly neutral with respect to this clash between opposed worldviews. It is even

excessively naive to think that contemporary science is religiously and theologically neutral, standing serenely above this battle and wholly irrelevant to it. Perhaps *parts* of science are like that: mathematics, for example, and perhaps physics, or parts of physics ... Other parts are obviously and deeply involved in this battle: and the closer the science in question is to what is distinctively human, the deeper the involvement.<sup>4</sup>

Much of contemporary science is, however, on the side of the City of the World and does not serve God's purposes. More specifically, it proceeds from the assumption of metaphysical naturalism. By "metaphysical naturalism" Plantinga means roughly the view that "nature is all there is: there is no such person as God or anyone at all like him."<sup>5</sup> He does not think that there is a neat recipe for telling which part of science is neutral and which is not in this contest. But the rule of thumb, Plantinga suggests, is that its involvement depends upon how closely that part of science is engaged in the attempt to come to understand ourselves as human beings. Hence we can expect that much of what goes on in economics, psychology, sociology and also in biology, especially in sociobiology, proceeds from the assumption of metaphysical naturalism. Christians must not, therefore, uncritically accept what the scientific experts say because of the naturalist bias that is present in much contemporary science. It might be completely wrong seen from a Christian perspective.

Plantinga gives a number of examples from scientific practice to justify his claim that science is not religiously neutral. In an article in *Science*, the Nobel Prize winner Herbert Simon takes for granted that the rational way to behave is to try to act in such a way that one increases one's personal fitness, that is, to act so as to increase the probability that one's genes will be widely disseminated in the next and subsequent generations.<sup>6</sup> The problem for biology is, however, that quite a few people do not act so as to maximize their personal fitness. They behave in an altruistic way. Simon therefore tries to develop a theory of bounded rationality to explain this non-rational way of behaving. Plantinga asks if this scientific theory is religiously neutral. His answer is no. Perhaps this is the rational way to behave if one presupposes naturalism, but it certainly is not if one adopts instead a Christian point of view. According to Christians, altruistic people, such as Mother Teresa, behave rather in the most rational way since they actually reflect the unselfishly loving character of God. Therefore, "in Simon's account of altruism we have an example of a scientific theory that is clearly not neutral with respect to Christian commitment; indeed, it is inconsistent with it."<sup>7</sup>

Moreover, Richard Dawkins and Stephen Gould, for instance, maintain that evolutionary theory is not merely the best supported theory of the origin of life, but established fact. In other words, it is virtually certain that the theory (or at least something approximating it) is true. But the epistemological probability of evolutionary theory depends in part on what you think about naturalism and theism. Its probability given the empirical evidence is lower according to the views that theists hold than it is according to the views naturalists typically hold. This is so because evolutionary theory is the only game in town for naturalists, whereas theism is compatible with it but allows the possibility that God could have created the world in a different way. Plantinga concludes that "the way in which the theory of evolution is not religiously neutral is ... that the view in question is much more probable with respect to naturalism and the [empirical] evidence than it is with respect to [Christian] theism and that evidence."<sup>8</sup>

Plantinga quotes Dawkins, Futuyma, Gould, and Simpson claiming that evolutionary theory has shown or given us reason to believe that our species is merely accidental, that there was no plan or mind or foresight involved in it coming into existence. But Plantinga believes that "of course no Christian theist could take that seriously for a moment" because he or she knows that human beings are created in the image of God and, therefore, their existence cannot be merely accidental but is a part of God's plan.<sup>9</sup> Again, science is not religiously neutral because it is inconsistent with what Christians believe to be true.

Simpson, furthermore, in answering the question "What is man?" maintains that "all attempts to answer that question before 1859 [the year Darwin's *Origin of Species* was published] are worthless and that we will be better off if we ignore them completely."<sup>10</sup> But this also is incompatible with Christian belief. According to Christians, the Bible (which is dated way earlier!) teaches us that we are created in God's image, that we are sinners who need God's love and redemption, and so forth. So here again we have evidence that science is not religiously neutral.

Hence it is evident that we can find examples of naturalist bias within contemporary scientific practice. But how should Christians respond to this? What should we say in the public debate about what science is and should be?

## II. Different Kinds of Augustinian Science

Plantinga is not satisfied with merely a Christian criticism of contemporary science and a disclosure of hidden or unreflected presumptions of naturalism. He wants to go one step further and maintains that "a Christian academic and scientific community ought to pursue science in its own way, *starting from* and taking for granted what we know as Christians."<sup>11</sup> Christians should develop what he sometimes calls "theistic science," at other times "Augustinian science." What is then Augustinian science? Plantinga writes that "in doing Augustinian science, you start by assuming the deliverances of the faith, employing them along with anything else you know in dealing with a given scientific problem or project."<sup>12</sup> Christians should in doing science appeal, when appropriate, to what they know

about God, or God's activity or to what they know by the testimony of the Bible and take these beliefs as part of the background with respect to which the plausibility and probability of scientific theories are to be evaluated.

Christians can employ the basic tenets of Christianity in scientific practice in different ways:

- (1) stating and employing hypotheses according to which God does things directly, of course, but also (2) stating and employing hypotheses according to which he does something indirectly; further, there is (3) evaluating theories with respect to background information that includes Christian theism; still further, there is (4) employing such propositions as *human beings have been created in God's image*, either directly or as background, and (5) doing the same for such doctrines as that of original sin, which do not involve any direct mention of God at all, and (6) deciding what needs explanation by way of referring to that same background.<sup>13</sup>

Hence, the appropriate response to the naturalist bias we can find in contemporary science is to develop a *specific Christian* way of doing science. According to this view of science, it is acceptable that Christians start by assuming the truth of their religious beliefs and employ them together with everything else they know or at any rate think that they know in dealing with a given scientific problem. We would thus have within the Academy at least a *naturalist science* and a *theistic science*. Practitioners of naturalist science and theistic science would sometimes say and do the same thing. But at other times they would not, because their research is shaped by the prior acceptance of different worldviews. We might have thought that there could and should be one common science, but instead Plantinga urges us to accept different worldview shaped sciences within the Academy.

What are we to make of this proposal? Let us, however, before considering this question, acknowledge that Plantinga is by no means alone within the contemporary academy to argue for this kind of conception of the scientific enterprise, although these people might of course think that science should be shaped by another worldview or ideology than Christianity. Among our fellow theists we have Muslims who express similar ideas. They talk about a "sacred science" or an "Islamic science." Mehdi Golshani, for instance, writes that some people deny that "the idea of Islamic Science" makes any sense. "They argue that science is an objective and universal enterprise, and it does not depend on any creed or ideology." But Golshani maintains that "this is a naive interpretation of scientific activity and that "Islamic Science," or for that matter, "religious science," has relevance at ... [both] the theoretical level and the practical level."<sup>14</sup>

But also among Marxists and feminists can we find views that are strikingly similar to Plantinga's view. The Harvard biologist, R. C. Lewontin, for instance, writes together with Steven Rose and Leon J. Kamin, that they:

share a commitment to the prospect of the creation of a more socially just—a socialist—society. And we recognize that a critical science is an integral part of the struggle to create that society, just as we also

believe that the social function of much of today's science is to hinder the creation of that society by acting to preserve the interests of the dominant class, gender, and race.<sup>15</sup>

They thus believe in "the possibility of a critical and liberatory science," in short, (and in a less value-loaded terminology) in a *left-wing science*.<sup>16</sup>

Moreover, Sandra Harding maintains that we should not merely criticize conventional science for being an androcentric science but replace it with a *feminist science*, that is, a "knowledge-seeking that is directed by existing feminist theories and agendas."<sup>17</sup> Feminist science is "politicized research" which is "directed by feminist rather than androcentric goals."<sup>18</sup> Notice on this point the similarity between Helen Longino's advice to feminists and Plantinga's to Christians: Longino writes that "in order to practice science as a feminist ... one must deliberately adopt a framework expressive of that political commitment"<sup>19</sup> and Plantinga that "a Christian academic and scientific community ought to pursue science in its own way, *starting from* and taking for granted what we know as Christians."<sup>20</sup>

All of these accounts are then Augustinian in the broad sense that their advocates maintain that it is legitimate to employ one's faith or ideology in doing science. They all start with an explicit commitment to a particular ideology or religion and then argue that it should in a profound way be permitted to shape the scientific activity. I suggest, therefore, that we call the generic form of this kind of view of science *worldview-partisan science* because it can be maintained also by people who do not see themselves as Christian theists or theists at all. Thus, feminist science (Harding and Longino), left-wing science (Lewontin, Kamin and Rose), Islamic science (Golshani) and Augustinian or theistic science (Plantinga) are different versions of worldview-partisan science.

### III. What Options Do We Have?

How should we think about this matter?<sup>21</sup> Clearly we face a very difficult but equally crucial question. Plantinga and these other science critics are right, I think, in that it is unrealistic to think that no faith or ideological commitments enter into the fabric of science. As a Christian, I am as worried as Plantinga about the naturalism that often seems to be presupposed in what many contemporary scientists write and say. The theologian John F. Haught even thinks that this kind of naturalism or materialism "has become so intimately intertwined with modern science that today many scientists hardly even notice the entanglement."<sup>22</sup> This form of naturalism is often called "scientific naturalism." Roughly, it is the view that only science provides us with a reliable path to knowledge and that the only things that exist are the ones science can discover: matter is what ultimately exists. (Scientific naturalism is also sometimes called "scientism.") In my recent book, *Scientism: Science, Ethics and Religion*, I have tried to make the entanglement that some evolutionary biologists are involved with explicit and also tried to distinguish scientific naturalism from what I take to be proper scientific procedures.<sup>23</sup> In short, I have opted for the view:

- (1) Scientific naturalism is not proper science because it is shaped by religious or ideological elements.

But notice that if we follow Plantinga's advice we cannot really argue in that way. This is so because if we as Christians maintain that we should be entitled to let our religion shape science to such an extent that we find it appropriate to talk about an Augustinian science, then of course people who hold a different worldview such as naturalism must be allowed to let their worldview shape science to a similar degree. Hence, it seems as if Plantinga must accept that:

- (2) Scientific naturalism is proper science.<sup>24</sup>

The importance of this point can be illustrated by Plantinga's attempt to criticize Fredric Crew for "failing to distinguish empirical evolutionary science from a philosophical or religious patina added by those who embrace metaphysical naturalism," in Crew's review essay "Saving Us from Darwin."<sup>25</sup> Crew responds by saying that what Plantinga really wants is to replace Darwinism with "Augustinian science" and explains that "this 'science' takes as its starting point what Plantinga calls 'our knowledge of God'."<sup>26</sup> The issue that Crew probably had in mind but forgot to state explicitly (in a reply that leaves much to be asked for) is "How could Plantinga consistently criticize him for not distinguishing between empirical science and naturalist beliefs, if Plantinga thinks it is proper science to take as scientist one's starting point in Christian beliefs?"

What Plantinga could, of course, consistently complain about and which goes beyond (2) is that Crew, Dawkins, Simpson and others tend to hide their metaphysical naturalism and try to sell it as a proper part of public science (that is, as a science that is supposed to be free from religious or ideological commitments), when it is in fact not. Thus, his position might be:

- (3) Scientific naturalism is not proper science because the religious or ideological elements it is shaped by are not made explicit.

However, as soon as Dawkins, Simpson and these other scientists have made it explicit that they are starting from and taking for granted what they know or at any rate think that they know *as* naturalists (that God does not exist, that the only reliable path to knowledge is science, that matter is all that ultimately exists and so on) and that they are employing this together with everything else they know in dealing with a scientific problem or project, then it seems that Plantinga cannot demur. But perhaps this is not quite right either. The reason why is that there is actually one other way in which Plantinga could maintain that scientific naturalism is not really science, namely if his complaint were:

- (4) Scientific naturalism is not proper science because it is shaped by the wrong kind of religious or ideological elements.

Scientific naturalism (or feminist science or left-wing science for that mat-

ter) is not proper science because it does not assume the deliverances of Christian faith and only this kind of science is what we really should call "science." I do not think that this is the position Plantinga tries to persuade us to take, but it is nevertheless a possibility. Actually some feminists seem close to embracing (4) or something very like it. Harding, for instance, believes that "feminist natural sciences," when developed, would provide us with "ways to obtain less partial and distorted knowledge of the empirical world" than the conventional natural sciences.<sup>27</sup>

As far as I can see, these are the options that are available to us and we have to make up our mind about which one we should accept.

#### IV. *The Regulative Ideal of Science*

Plantinga and also these other science critics have given convincing examples of when and how people's ideologies or religions enter into the fabric of science. So much is clear. However, we need to distinguish between the issue (A) whether science as it is done today (or in the past) *is* (or *was*) free from ideological or religious considerations and the issue (B) whether science *should be* or *strive to be* free from ideological or religious considerations. Phrased somewhat differently, the term "science" can be used either descriptively or normatively. Either we can mean by "science" the activities that scientists are actually engaged in when developing theories and explanations (call this *actual science*), or we could mean the activities that scientists *ought to be* engaged in when doing science at its best (call this *good science*).

Although it may be taken for granted that, for instance, theories sometimes—maybe even often—are accepted by scientists because of politics, religion, and gender, we may equally wonder whether that ought to be the case. For example, should we accept political, religious, or gender preferences as valid reasons for accepting or rejecting scientific theories or explanations? The answer of course is not obviously "yes." It is thus not enough to display cases where we can see that faith or ideology commitments have shaped scientific practice, to refute the idea of a worldview-neutral science. It must also be shown that it is unrealistic or perhaps undesirable to accept that idea as a regulative ideal for actual scientific practice. Perhaps this could be done by arguing that there is no way to institutionalize scientific practice so that it can ensure that theories are accepted by the scientific community independently of ideological or religious concerns. Or if it is realistic, to argue that it is still better to let science for some reason be shaped by religions or ideologies.

Moreover, we have to distinguish between those who claim that (C) science in general is or should be influenced by ideologies or religions, on the one hand, and those who maintain that (D) merely parts of science are or should be shaped in such a way, on the other. Reflecting the former position, Sandra Harding writes: "When we [the feminists] began theorizing our experience ... we knew our task would be a difficult one. But I doubt that in our wildest dreams we ever imagined we would have to reinvent both science and theorizing itself to make sense of women's experience."<sup>28</sup> A statement like this seems to indicate that at least some feminists think that the whole scientific enterprise—at least up until the recent develop-



ment of feminist science—is ideologically biased. The view is then not that merely certain scientific programs or theories are expressions of male-gender bias, but that science as a whole is disguised androcentric ideology. On the other hand, Plantinga writes, as we have seen, that it would be “excessively naive to think that contemporary science is religiously and theologically neutral, standing serenely above this battle and wholly irrelevant to it.” Nevertheless, he continues in the next sentence: “Perhaps *parts* of science are like that: mathematics, for example, and perhaps physics, or parts of physics ... Other parts are obviously and deeply involved in this battle: and the closer the science in question is to what is distinctively human, the deeper the involvement.”<sup>29</sup> Thus, according to his view, while not every scientific discipline is religiously neutral, this critique does hold true for some of them or some parts of them.

If we take into account these two distinctions, we end up with the following list of alternative:

	Worldview-Neutral Science	Partially World-view-Neutral/Partisan Science	Worldview-Partisan Science
Actual Science	1	2	3
Good Science	4	5	6

Whether actual science should be understood as characterized either by positions (1), (2), or (3), is a question that is open to empirical investigation. But I think that the examples Plantinga and other science critics have given are sufficient to show that position (1) is no longer tenable. My point, however, is that even if we reject position (1), that actual science is worldview-neutral, we are not forced thereby to accept that science should be worldview-partisan (position 6) or even partially worldview-partisan (position 5). We can still argue that science ought to be free from ideologically or religious considerations. We can, of course, also make it a matter of degree, by maintaining that the fewer ideological elements that science contains the better.

But the cake can also be cut in different ways. One way to distinguish parts of science from each other is to focus, like Plantinga does, on (E) *different disciplines* or *subject matters*. But another is to focus on (F) the *ensemble of activities* that scientists whether they are physicists, biologists or sociologists are engaged in when doing science. Scientists *qua* scientists choose a research area and problems to solve, develop hypotheses, collect and interpret data; they try to convince their peers to accept their methods and theories; they publish their results in books and journals; they function as peer

reviewers both when it comes to what articles to publish and what research projects should be funded; they are involved in the storage and destruction of material used and in its application; they popularize research and explain the scientific results to the public; they function as expert advisers for private firms or governments; they teach and grade student papers, they decide what courses to offer and not to offer; they encourage/discourage students becoming scientists, they hire and fire people at their departments and they promote or do not promote a certain social structure at their institutions, they are engaged in fund raising and in accepting (and possibly also in rejecting) funds from government agencies, private companies and foundations. In all these scientific activities ideological or religious considerations could play a larger or smaller role, and it is something we could encourage or discourage, accept or reject.

#### V. *In What Ways Could and Should Science Not be Religiously Neutral?*

We cannot, of course, discuss all of these aspects of scientific practice and Plantinga seems anyway to be more interested in some of them than in others. So let us examine those that Plantinga bring to our attention, without forgetting that religions (or ideologies) could shape science in many other important ways as well. As we proceed it will become more clear what one exactly could mean when claiming that "science is not/ought not be religiously neutral."

Scientists must first decide what is worth studying, what they want to spend their time, energy, and their own or other people's money on. One way of understanding the regulative ideal of science as religiously (or ideologically) neutral is to maintain that it applies to this aspect of the scientific enterprise. Imre Lakatos writes that in his view "society ... has a responsibility ... of maintaining the apolitical, detached scientific tradition and allowing science to search for truth in the way determined purely by its inner life."<sup>30</sup> The idea is that science ought to be autonomous in the sense that the direction of research should proceed undisturbed and not be determined by any ideological or religious interests.

Plantinga thinks that this is wrong. First, and as we have already seen, many scientific projects start from and are motivated by naturalism. So in this sense science *is* not religiously neutral. Second, the Christian community should not only point this out, but do science in its own way and from its own perspective, which includes "deciding what needs explanation" seen from that point of view.<sup>31</sup> He maintains in his advice to Christian philosophers that "the Christian community has its own questions, its own concerns, its own topics for investigation, its own agenda and its own research program."<sup>32</sup> So Christians because they are Christians have certain interests and find certain things, but not others, puzzling and thus in need of explanation. Plantinga claims that this is something we should accept in scientific practice. Therefore, we should reject the idea that science *ought* to be religiously neutral in this sense. It is entirely appropriate that Christians let their religious convictions influence what they decide to do research on and what questions to ask.

It is clearly the case, I take it, that there are certain things that rich but

not poor people, white but not colored people, men but not women, Christians but not naturalists, liberals but not socialists, or vice versa, are interested in and which will sometimes determine what they as scientists decide to work on or just as important, what they choose not to investigate or try to explain. Science in this sense is religiously or ideologically partisan. Should we try to prevent this kind of influence? Not necessarily. The development of science might sometimes even benefit from it because some topics, some things in need of explanation, scientists might simply fail to notice if they share too many interests or have similar ideological background beliefs. To take one recent example, consider women who have experienced that the society they are a part of denies them certain things, like equal opportunity irrespective of gender to be hired for doing a job they are qualified to do or equal salary irrespective of gender when doing the same job as men do. If these experiences together with the ideological interest to have the same opportunities as men determine that a group of female scientists decide to study the question of what causes the oppression of women, who has a right to complain?

Hence, it seems quite reasonable to allow ideological or religious motives to guide what kind of research scientists get involved in. But it is, of course, extremely important that we realize that such a rejection of the *autonomy of science* means that ideological interests are in such a situation allowed to strongly influence what kind of scientific inquiries gets done and what kind does not. Thus, we should perhaps actively try to promote a direction of scientific research that takes into account the interests of a broad variety of groups in our society. Moreover, we ought probably to try to ensure that the scientific community consists of people with different ideological or religious backgrounds so that the research topics undertaken reflect the interests of different groups of people. On this issue we should go along with Plantinga, although I think that the question is more complex than what we have been able to take into account in this context.

There is another, second way in which Plantinga claims that science is not religiously neutral. Plantinga writes, as we have seen, that "in Simon's account of altruism we have an example of a scientific theory that is clearly not neutral with respect to Christian commitment; indeed, it is inconsistent with it."<sup>33</sup> Positively speaking, this is one of the three ways in which Plantinga suggests that "a scientific theory can be relevantly related to the theological or religious claims characteristic of the theistic religions. First, a scientific theory may be incompatible with those claims."<sup>34</sup> Here Plantinga seems to assume that science is religiously neutral only if it does not refute or undermine religious beliefs and values. But since that is not the case science is religiously partisan.

This is certainly a possible way to interpret the claim that "science is not religiously neutral." The problem, however, is that those scholars who advocate the idea of a science free from religions (or ideologies) do not think that science is or should be religiously neutral in this sense or at any rate they should not hold such a view. The reason is simply that science has over the centuries refuted or undermined numerous religious and ideological beliefs which people have held. Let us recall a few beliefs of relevance to Christianity. Science has discovered that the earth is billions of

years old and thus refuted the religious belief that the earth was created by God around 6,000 years ago. Religious people have held (and advocates of flat earth society still do) that the Bible teaches that the earth is flat and that we therefore ought to believe this. Science has refuted this idea and replaced a geocentric with a heliocentric worldview. In New Testament times and all through the Middle Ages many religious believers thought that people with certain symptoms, whom we today through science have discovered suffered from mental diseases, were possessed by demons or evil spirits. Science, furthermore, undermines the religious idea that *Homo sapiens* descended from just one couple, Adam and Eve. In fact, science has the potential to undermine (or support for that matter) *any* religious belief that *has empirical content*. Here lies also the key to understanding why we cannot expect that science is (or should be) religiously neutral in this sense, because investigating empirical claims and developing theories about empirical states of affairs is what science is all about; it is its proper domain. If religious or ideological beliefs contain an empirical element or presuppose the truth of such an element, these beliefs can be undermined or refuted by scientific theories and data (and they can, of course, also be supported or verified by scientific theories and data).

Therefore, we should grant that science could be *worldview-relevant* in respect to religions or ideologies, while it could at the same time be *worldview-neutral* in respect to them. Worldview-relevance does not imply worldview-partisanship. Science, if worldview-neutral, would (on such an account) belong to neither side in a controversy, say between theism and naturalism or liberalism and socialism, but could obtain research results relevant for the truth-claims and value judgments involved in such a controversy. Science would, on the other hand, be *worldview-irrelevant* if that were not possible. If so, all scientific research that might yield results, which are ideologically or religiously controversial in any way, would need to be abandoned.

The difficulty with Simon's account cannot, therefore, merely be that it is inconsistent with Christian beliefs; the problem must be elsewhere. Where? Simon's theory about human docility and limited rationality is developed as he tells us within the framework of neo-Darwinism to explain the spreading of altruistic behavior. By "docility" he means the tendency we can find among humans to accept social influence. He writes, "Docile persons tend to learn and believe what they perceive others in the society want them to learn and believe."<sup>35</sup> His idea is that "because of the limits of human rationality, fitness can be enhanced by docility that induces individuals often to adopt culturally transmitted behavior without independent evaluation of their contribution to personal fitness."<sup>36</sup> "Because of bounded rationality, the docile individual will often be unable to distinguish socially prescribed behavior that contributes to fitness from altruistic behavior."<sup>37</sup> For these and some other reasons Simon concludes that docile persons will necessarily also behave altruistically. But then does this not mean that the really rational way to behave is to try to increase one's personal fitness? Is not the assumption underlining Simon's reasoning that if people were smarter (and perhaps a little less docile) they would be able to screen this culturally transmitted altruistic behavior and

instead behave in a (non-bounded) truly rational way? But why think that altruistic behavior is a manifestation of limited rationality? Why not instead think, as Plantinga suggests, that it is a manifestation of genuine rationality? Altruistic behavior is from at least a Christian perspective very rational because it reflects the character of God. So what is going on here?

I suggest that the reason why Simon may assume that the rational way to behave is to try to increase one's fitness is that he (consciously or unconsciously) interprets evolutionary theory *scientistically*. Simon assumes that neo-Darwinism is the whole story of human behavior. Maybe he shares with Michael Ruse and Edward O. Wilson the idea that "morality ... is merely an adaptation put in place to further our reproductive ends" and "in an important sense, ethics ... is an illusion fobbed off on us by our genes to get us to cooperate."<sup>38</sup> Given this kind of perspective it is also not particularly surprising that Richard Dawkins writes, "much as we might wish to believe otherwise, universal love and the welfare of the species as a whole are concepts that simply do not make evolutionary sense."<sup>39</sup> Because if morality is merely an adaptation put in place to further our reproductive ends and if one *also* believes that evolutionary theory provides us with an all-sufficient explanation, what else can practical rationality be than maximizing personal and genetic fitness?

If Simon shares these ideas with Dawkins, Ruse and Wilson then the problem for Christians who maintain that science should be religiously neutral is not really that his theory of bounded rationality is inconsistent with their religious convictions. The difficulty is, more precisely, that his and other biologists' account presupposes the prior acceptance of a rival worldview or ideology, namely scientific naturalism. But a Christian can rightly point out that claims like "only science provides us with a reliable path to knowledge" and "the only things that exist are the ones science can discover, that is, matter is what ultimately exists," are not scientific claims or entailed by such claims and that scientific inquiry can without any problems whatsoever be conducted without making these kinds of epistemological and metaphysical assumptions.

This means that the regulative ideal of science as religiously neutral is probably best understood as a claim about what scientific investigation ought not to presuppose. *Science should be religiously neutral in the sense that it ought not to presuppose the truth of any particular worldview, religion or ideology such as Christianity, Marxism, feminism or naturalism.* This means, more exactly, that ideologies or religions ought not to be among the grounds for accepting and rejecting theories in science. Theories should be accepted by the scientific community only in the light of considerations that involve empirical data, other accepted theories and intra-scientific criteria such as consistency, simplicity and explanatory power. Ideological or religious considerations are therefore illegitimate ways of deciding between scientific theories. They threaten the *integrity of science*. The basic idea is that you do not have to agree on what constitutes a good human life or society, what a just social order is, what the appropriate differences (if any) between the genders are, whether God exists and whom God is if God exists, to be able to evaluate scientific theories properly. The choice of scientific theory should not be determined by moral, personal, ideological or

religious ideas, but by intra-scientific criteria.

Is it not this that is the real problem also with Simpson's claim—which Plantinga brings to our attention—that all attempts to answer that question "What is man?" before Darwin published *The Origin of Species* in 1859 are worthless and that we will be better off if we ignore them completely? It is reasonable to assume that Simpson in telling us these things (and Dawkins in quoting him approvingly) simply presuppose the truth of scientific naturalism. Only if they take for granted that genuine knowledge can be obtained solely by employing the methods of science, does it seem reasonable to state in this *a priori* fashion that all human inquiries of human nature before the development of Darwinism are simply worthless. Only by assuming not merely that "Biology after 1859 gives us knowledge of human nature" but that "Nothing but biology (or the sciences) after 1859 gives us knowledge of human nature" or something along those lines can Simpson and Dawkins as scientists maintain by implication that what Christians take to be crucial information, namely that we are created in God's image and that we are sinners who need God's love and redemption, are really worthless and that we will be better off if we ignore these ideas altogether. But "Nothing but biology (or the sciences) after 1859 gives us knowledge of human nature" and similar pronouncements are of course not something that science has the means to confirm. On this point Simpson and Dawkins violate the regulative ideal of science as religiously and ideologically neutral by assuming the truth of a particular ideology in their scientific reasoning.

The same analysis can probably be made about the claim—which Plantinga thinks a Christian cannot take seriously for a moment<sup>40</sup>—made by Dawkins, Futuyma Gould, and Simpson that evolutionary theory has shown or given us reason to believe that our species is merely accidental, that there was neither plan nor mind nor foresight involved in its coming into existence. If all individual species that come into existence through the process of evolution are random (i.e., have a low probability) with respect to what evolutionary theory (or more broadly, the sciences) can predict or retrospectively explain and if *the only source of knowledge we have is science (or more specifically evolutionary biology in this case)*, then perhaps it follows that we ought to believe that our existence is the result of pure chance or in other words it is not a part of anyone's plan and serves no one's end. But this is a scientific and not a scientistic argument because its second premise assumes the truth of scientism or scientific naturalism. Merely the first premise, the scientific one, is, however, compatible with the assumption that God knew before the creation of the world that human beings or at any rate intelligent life would be the inevitable product of the evolutionary process and that therefore we (or intelligent life) exist for a reason.

It is therefore somewhat misleading to write that worldview-neutral science, or what Plantinga calls "Duhemian science," "would be maximally inclusive and wholly neutral with respect to the word-view differences that separate us."<sup>41</sup> On the contrary, worldview-neutral science might totally undermine a particular ideology or religion if it contains (or presupposes the truth of) many empirical claims that science can show to be false. The idea is rather that *science ought not to grant a privileged status to any par-*

*ticular worldview, ideology or religion in the sense of presupposing its truth* in the way, for instance, Marxism was assumed to be true in "Lysenkoian" biology in the Soviet Union or Nazism in "Aryan" physics in Germany. It is in this way, I suggest, that we should understand the idea that Duhemian science (in contrast to Plantinga's Augustinian science) ought not to be ideologically or religiously partisan but neutral.

#### VI. Why Accept Augustinian Science as Good Science?

Plantinga rejects the regulative ideal of science as ideologically or religiously neutral also in this third sense. He maintains, as we have seen, that Christians as scientists should start from what they think that they know as Christians. They should in doing science appeal, where appropriate, to what they know about God, or God's activity or to what they know by the testimony of the Bible.<sup>42</sup> These beliefs ought to be part of the background evidence with respect to which the plausibility and probability of scientific theories are to be evaluated. Hence, science should not be ideologically or religiously neutral in the sense that it should not presuppose the truth of any particular worldview, religion or ideology such as Christianity, Marxism, feminism or naturalism.

Again it is well worth pointing out that Plantinga is not alone within the contemporary Academy in arguing for an Augustinian science or a worldview-partisan science along these lines. For instance, Longino writes,

The idea of a value-free science presupposes that the object of inquiry is given in and by nature, whereas the contextual analysis [that is, her own] shows that such objects are constituted in part by social needs and interests that become encoded in the assumptions of research programs. Instead of remaining passive with respect to the data and what the data suggest, we can, therefore, acknowledge our ability to affect the course of knowledge and fashion or favor research programs that are consistent with the values and commitments we express in the rest of our lives. From this perspective the idea of a value-free science is not just empty but pernicious.<sup>43</sup>

With this last statement Longino claims that the very idea of a value-free science and, I assume, also a worldview-neutral science, is dangerous and therefore ought not to serve even as an ideal. On the contrary, scientists should not merely make their ideological commitments explicit when participating in policy making, religious or moral debates, and so forth, but they should also interpret the data in such a way that those theories which guarantee the reinforcement of their own social ideals will be validated. However, "in order to survive and attract participants" this must be done in such a way that "some of the standards/values characterizing the scientific community within which it is proposed" are satisfied.<sup>44</sup> Longino points out that on this issue neo-Marxists (like Lewontin) and radical feminists have a similar view: "the neo-Marxists are understood as advocating an alternative vision of nature and natural processes largely on *moral* and *sociopolitical* grounds....In this regard the neo-Marxists stand on the same

ground as the feminist scientist. In order to practice science as a feminist, as a radical, or as a Marxist one must deliberately adopt a framework expressive of that political commitment.<sup>45</sup> Ideological considerations are thus to be regarded as legitimate constraints on scientific reasoning.

But *why* should we accept a worldview-partisan science, in the sense that religious or ideological considerations should be allowed to play a legitimate role in determining which theories scientists ought to accept or reject? Does Plantinga really give us any good reason why we should develop an Augustinian science?

What is evident is that he has given us convincing examples of naturalist bias within contemporary science. But, as we have seen, this is not in itself sufficient to support the idea of an Augustinian science. It is not sufficient because one can still maintain that the appropriate way to respond is to reject these scientists' ideas once we discover that they are not merely based on accessible empirical evidence, but depend for their justification on the prior acceptance of certain ideological convictions. More precisely, as soon as we discover that scientists accept scientific hypotheses because they fit their ideological beliefs or values, these hypotheses ought not to be considered a part of the body of justified scientific theories. Science ought to be so structured as to discourage scientists from advocating scientific hypotheses because they fit their ideological or religious convictions. In good science, scientists should be encouraged to expose—and receive recognition for exposing—ideological assumptions functioning as control beliefs for what theories are accepted or rejected by the scientific community. This is, in fact, also what has happen many times in the history of science.<sup>46</sup> Perhaps Harding and Longino are right that many scientists have failed to see the extent to which male bias functions as control beliefs in scientific reasoning and perhaps Plantinga is right that the same is true about naturalist bias in contemporary science. But as long as the scientific community can be constituted in such a way that it contains scientists who adhere to a great variety of religions or ideologies and these people's voices are not silenced, we can still, when it comes to the validation of scientific theories, continue to hold on to the non-Augustinian conception of science as a regulative ideal for scientific practice.

Plantinga seems to anticipate this objection because he admits that a possible response to Dawkins, Simon and other scientists is to maintain that when they say these things about rationality, purpose, pre-Darwinian ideas about human nature and so on, then they are not strictly speaking doing science because their conclusions requires the acceptance of certain extra-scientific premises. But his comment is that this "is not really the important question for my present purposes."<sup>47</sup> This is puzzling because he not merely says that his objective is to give examples of naturalist bias in current science, but to "argue that a Christian academic and scientific community ought to pursue science in its own way, *starting from* and taking for granted what we know as Christians."<sup>48</sup> But if one can on scientific grounds criticize Dawkins, Simson and these other scientists by pointing out that they presuppose naturalism in their scientific reasoning, then one crucial reason why Christians should develop their own kind of science fails. Why develop a theistic science if one can show that naturalist science is not proper sci-



ence? (The same applies to feminism: why promote a distinct feminist science if one can argue that masculinist science is not proper science?)

Another reason why we should develop an Augustinian science that Plantinga appears to give is that since we know many important things as Christians, it would be unwise or unnatural if we accepted a constraint that did not allow us to use that information in doing science.<sup>49</sup> Why should we not use everything we know in doing science? Notice first—given the distinctions I have made—what, the question concerns. I am not saying that Christians should not let what they know or at any rate believe that they know, influence the kind of research topics they undertake or the hypotheses they propose or what already accepted scientific theories they want to take a second look at. What I am saying is merely that *they should not claim that their Christian convictions ought to be considered a proper part of scientific theory validation*. They ought not to maintain that Augustinian science in this sense is proper science.

Because if they do, then people of other faiths and ideologies who also believe firmly that they know particular things as a result of *their* adherence to these faiths and ideologies can claim that their “knowledge” also ought to be considered a proper part of scientific theory validation. But since it seems as if we cannot come to an agreement about which worldview we should accept, we face a choice. We can either choose to (a) accept a pluralism of worldviews in scientific theory validation or try to (b) limit their influence as much as we can, and whenever a theory is accepted because of worldview considerations point this out and thereby disqualify it as a proper part of the body of scientifically justified theories.

But, of course, it is easier for me and those Christians who are a bit more uncertain than Plantinga about whether they really know their Christian beliefs to be true, to accept this. (Those who perhaps understand their Christianity more in terms of faith, than in terms of knowledge.) But at any rate the history of science should make even the most convinced Christians hesitate before maintaining that their convictions ought to be a proper part of scientific theory validation. For instance, many Christians have really thought they *knew* that the Bible taught that the earth was flat, that the earth was at the center of the universe, and that God created the different species on earth in a fixed form roughly six thousand years ago, and for a long time—as we all know—these beliefs hindered the progress of scientific inquiry. None of Plantinga’s reasons why Christians ought to develop an Augustinian science in this sense are therefore convincing.

In conclusion, the regulative ideal of science we should accept is one where Christian or naturalist, feminist or masculinist, right-wing or left-wing considerations are not allowed to play a role in determining which theories the scientific community ought to accept or reject. This holds true even if Plantinga and others are right that violations of this ideal in the actual life of scientific inquiry happen more frequently than we have previously thought. However, this does not mean, and on these points I think Plantinga is right, that scientists who are Christians should not let what they believe or know as Christians influence the kind of research topics they undertake, the hypotheses they develop or what already accepted sci-

entific theories they want to take a second look at or their views about how scientific results should be used. We could therefore agree with Plantinga that "science (at least when properly pursued) is [actually not] a cool, reasoned, wholly dispassionate attempt to figure out the truth about ourselves and our world, entirely independent of ideology, or moral convictions, or religious or theological commitments."<sup>50</sup> But we could still reject an Augustinian science or a worldview-partisan science, if we by that means a science in which religious or ideological beliefs and values function as control instances of what theories ought to be accepted or rejected by the scientific community. If we, on the other hand, by an "Augustinian science" or a "worldview-partisan science" merely means a science in which Christians, Muslims, socialists, feminists and so forth are allowed to let their worldview convictions influence the kind of research topics undertaken, the hypotheses developed or what already accepted scientific theories need to be critically scrutinized again (looking for undetected ideological bias), or how we should use the results of scientific inquiry, then such a science seems to be unavoidable or if avoidable at least acceptable, probably even desirable. Thus, the position taken here involves a rejection also of a traditional understanding of the idea of a religiously or an ideologically neutral science. It provides an alternative to both Augustinian science and Duhemian science (as Plantinga defines them).<sup>51</sup>

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#### NOTES

1. For instance, Jitse M. van der Meer (ed.), *Facets of Faith and Science*, Vol. 1-2 (Lanham: University Press of America, 1996) and George M. Marsden, *The Outrageous Idea of Christian Scholarship* (Oxford: Oxford University Press, 1997).
2. Alvin Plantinga, "Methodological Naturalism?" in van der Meer (ed.), *Facets of Faith and Science*, Vol. 1, pp. 178-9.
3. Alvin Plantinga, "When Faith and Reason Clash," *Christian Scholar's Review*, 21(1991), p. 30 and "Methodological Naturalism?" p. 178.
4. Plantinga, "When Faith and Reason Clash," p. 16.
5. Alvin Plantinga, "Science: Augustinian or Duhemian?" *Faith and Philosophy*, 13 (1996), p. 369.
6. Herbert Simon, "A Mechanism for Social Selection and Successful Altruism," *Science*, 250 (1990).
7. Plantinga, "Methodological Naturalism?" p. 184.
8. Plantinga, "Methodological Naturalism?" p. 186.
9. Plantinga, "Methodological Naturalism?" p. 187.
10. Richard Dawkins, *The Selfish Gene*, (Oxford: Oxford University Press, 2nd ed. 1989) p. 1.
11. Plantinga, "Methodological Naturalism?" p. 178.
12. Plantinga, "Science: Augustinian or Duhemian?" p. 377.
13. Plantinga, "Methodological Naturalism?" p. 212.
14. Mehdi Golshani, "How to make sense of 'Islamic Science?'" *American Journal of Islamic Social Sciences*, 17 (2000), p. 1.
15. Steven Rose, R. C. Lewontin and Leon J. Kamin, *Not In Our Genes: Biology, Ideology and Human Nature* (London: Penguin Books, 1990 [1984]), pp. ix-x.
16. Rose, Lewontin and Kamin, *Not In Our Genes*, p. ix-x.

17. Sandra Harding, *Whose Science? Which Knowledge?* (Milton Keynes: Open University Press, 1991), p. 305.
18. Sandra Harding, *The Science Question in Feminism* (Milton Keynes: Open University Press, 1986), p. 24 and *Whose Science? Which Knowledge?* p. 310.
19. Helen Longino, *Science as Social Knowledge* (Princeton: Princeton University Press, 1990), p. 197.
20. Alvin Plantinga, "Methodological Naturalism?" p. 178.
21. Other articles in which Augustinian science has been discussed are Howard van Till, "When Faith and Reason Cooperate," Pattle Pun, "Response to Professor Plantinga," Ernan McMullin, "Plantinga's Defense of Special Creation" (all published in *Christian Scholar's Review*, 21(1991) pp. 33-109) and William Hasker, "Evolution and Alvin Plantinga," *Perspectives on Science and Christian Faith*, 44(1992) pp. 150-162.
22. John F. Haught, *Science and Religion* (New York: Paulist Press, 1995), p. 33.
23. Mikael Stenmark, *Scientism: Science, Ethics and Religion* (Aldershot: Ashgate, 2001).
24. Given, of course, that scientific naturalism satisfies the other requirements that scientists typically demand that scientific theories have to satisfy.
25. Fredric Crew, "Saving Us from Darwin," *The New York Review of Books* (October 4, 2001).
26. Alvin Plantinga, Benjamin Kissing, Roger Shattuck, Charles Gross, and Fredric Crew, "Saving Us from Darwin: An Exchange," *The New York Review of Books* (November 29, 2001).
27. Harding, *Whose Science? Whose Knowledge?* p. 56.
28. Harding, *The Science Question in Feminism*, p. 251.
29. Plantinga, "When Faith and Reason Clash: Evolution and the Bible," p. 16.
30. Imre Lakatos, *Mathematics, Science and Epistemology: Philosophical Papers, Vol. 2*, in John Worrall and Gregory Currie (eds.), (Cambridge, Cambridge University Press, 1978), p. 258.
31. Plantinga, "Methodological Naturalism?" p. 212.
32. Alvin Plantinga, "Advice to Christian Philosophers," *Faith and Philosophy*, 1(1984), p. 255.
33. Plantinga, "Methodological Naturalism?" p. 184.
34. Plantinga, "Methodological Naturalism?" p. 191.
35. Simon, "A Mechanism for Social Selection and Successful Altruism," p. 1666.
36. Simon, "A Mechanism for Social Selection and Successful Altruism," p. 1665.
37. Simon, "A Mechanism for Social Selection and Successful Altruism," p. 1667.
38. Michael Ruse and Edward O. Wilson, "The Evolution of Ethics," in James E. Huchingson (ed.), *Religion and the Natural Sciences: The Range of Engagement* (Forth Worth: Harcourt Brace, 1993), p. 310. See also Michael Ruse and Edward O. Wilson, "Moral Philosophy as Applied Science," *Philosophy*, 61(1986), p. 186.
39. Dawkins, *The Selfish Gene*, p. 2.
40. On this point I disagree. See Mikael Stenmark, "Evolutionary Biology, Religion and the Meaning of Life," *Metanexus: The Online Forum for Science and Religion* (2001) ([www.metanexus.net](http://www.metanexus.net)).
41. Plantinga, "Science: Augustinian or Duhemian?" p. 382.
42. Plantinga, "Science: Augustinian or Duhemian?" p. 380.
43. Longino, *Science as Social Knowledge*, p. 191.
44. Longino, *Science as Social Knowledge*, p. 193.

45. Longino, *Science as Social Knowledge*, p. 197 (italics added).
46. See, for instance, Leslie Stevenson and Henry Byerly, *The Many Faces of Science* (Boulder: Westview Press, 1995), chap. 6.
47. Plantinga, "Methodological Naturalism?" p. 187.
48. Plantinga, "Methodological Naturalism?" p. 178.
49. Plantinga, "Methodological Naturalism?" p. 192.
50. Alvin Plantinga, "Methodological Naturalism?" in van der Meer (ed.), *Facets of Faith and Science, Vol. 1*, pp. 178-9.
51. An earlier version of this paper was presented at the Ninth European Conference on Science and Theology, Nijmegen, Netherlands in March 2002. I am grateful to the participants of that conference for their helpful suggestions, and to Eberhard Herrmann and the members of the research group in philosophy of religion at the Department of Theology, Uppsala University, and two anonymous referees for helpful comments and questions.