TRUTH, THE GOAL OF SCIENCE

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Science, or the scientific enterprise, has a very specific goal. This can easily be obscured by the fact that scien*tists* have widely diverging goals in the actual doing of science. Along with many others I take it that the goal of science is truth—a view that I will comment on shortly and that will have to be qualified in various respects. But scien*tists*, men and women of flesh and blood, in doing science, may have completely different goals, such as: providing an income for one's family, getting famous, or making atheism 'look good' (as Richard Dawkins once said). The difference here is the difference between 'the goal that is inherent in science', or 'the goal that is constitutive of the scientific enterprise' on the one hand, and 'goals that are adherent to science', or 'goals that are personally interesting but inessential for the actual doing of science' on the other. I propose to put these latter goals to one side (at least for the time being, I will return to them in section 4), and concentrate on the goal that is constitutive for science: truth (given a couple of qualifications). And I propose to concentrate on that goal with the very specific question in mind whether there *can be*, and even whether *there are*, truths that somehow fall outside the purview of science, truths that science (as we now know it) doesn't have a handle on, truths that *can be*, and perhaps even *are* familiar to people even though they haven't familiarized themselves with them *via* scientific inquiry.

I will proceed as follows. First I will present the idea that truth is indeed the goal of science. If truth is the goal of science, the next natural question to address is how to go about reaching it. I therefore turn, in section 2, to the topic 'scientific method' (after all, 'method' comes from the Greek 'hodos' which means 'way') and consider the question whether scientific stands apart from other sorts of inquiry, or is somehow continuous with it. Next I turn, in section 3, to the idea that in order to do science some such substantive thesis as naturalism needs to be assumed. In section 4 I return to the topic of personal and deep seated motivatins in scientists: should they be banned? This enables me, finally, to address the question whether there are truths that science has no handle on.

1.Truth, the Goal of Science

The goal of science is to find out the truth about an astonishing variety of things. I could also say: science aims to find true answers to a variety of questions—to a variety of *sorts* of questions. For instance questions about

- *what exists* [are there planets in our solar system farther from the sun than Pluto? Which sorts of animals are endangered?]
- the *causes* of objects, states, and events [what are the causes of volcanic eruptions, diseases, criminal behaviour, wars, feelings of happines etc.?]
- the *constitution* of objects, states, and events [what is magma made of? how is the living cell constructed? what is DNA?]
- the *functions* that various items, or parts of items, have [what are the functions of the right brain hemisphere? What is function of the singing of birds, or of the giraffe's long neck?]

So, science aims to find out truths—true answers to questions. But this, of course, doesn't as yet give us anything of a full blown picture of science. Surely, one might agree, science aims at truth, but where does that leave *explanations* and *theories*? For science aims to provide explanations, doesn't it? And isn't it a goal of science to develop theories? So, aren't

explanation and theory construction goals of science next to finding out the truth about an astonishing variety of things? Well, they are surely goals of science, but they aren't goals of science *next to* finding out truths. For what we want in science is not just any old explanation, we want *true* (or *accurate*) explanations. And we don't want whatever wild theory we can think of, we want *true* (or *accurate*) theories. So, among the truths that science aims at, are truths that have the character of explanations and theories. And as was implied in the foregoing, there are truths that science lays its hands on that lack this explanatory or theoretical character. That there is such a planet as Pluto, for instance, is a truth that science has laid its hands on, but that truth is neither explanatory, nor theoretical in character (although it may be used in explanations and theoretical accounts of other phenomena). So, the occurrence of explanations and theories in science is no reason to think that science has goals next to truth.

Before moving on I should like to note that it is difficult if not impossible to characterize both 'explanation' and 'theory', I mean to characterize them in terms of what is necessary and sufficient for them. To be sure, one could simply announce, "a theory is this and this, and an explanation is such and so", but then one has offered at best a *reconstruction* of these notions, a reconstruction that will no doubt have the result that many theses that used to be called theories and explantions, deserve those names no longer. What I meant is that if one actually *looks* at what sort of theses scientists have called theories and explanations, it will be impossible to specify what is essential to all of them, for there is no such thing. Take for example Wegner's theory, and the kinethic theory of gases. Wegner's theory simply *states* that the plates of the earth are moving in certain directions. The kinethic theory of gases doesn't simply state or describe what is presumed to be the case, it *gives an account* of the presumed fact. Still, both are called 'theories'. As to explanation something similar holds: the explanation of the fact that the sun rises in the east is strikingly different from the explanation of the recent turmoil in the Parisian suburbs. If both of them refer to general behavioural patterns of the relevant objects, these patterns are of a strikingly different nature: physical patterns as opposed to social patterns—patterns which come about by very different cause-effect mechanisms: the cause-effect mechanisms involved in the explanation of the events that have been taking place in France lately, will never be involved in the explanation of the sun's rising in the east. Vice versa.

Having said this, I am happy to announce that I need not go further into these issues. For all that matters to me now is that both explanations and theories are capable of being true, whatever the nature of those theories and explanations. What matters even more to me is that so far we haven't seen a reason for thinking that next to truth science has other goals as well.1 There might very well be such goals, however. My colleage Henk de Regt, for example, has argued that one such goal is *understanding*. [INVOEG]

2.Scientific Methods Continuous with Everyday Ways of Investigation

If we assume that truth is at least one of the goals of science, the next question I should like to address is how science aims to attain that goal. In discussions of this pride of place is usually given to the notion of 'method' or 'scientific method'. Science aims to attain the goal of truth by applying certain methods. But what is the nature of those methods? What I mean by this question comes to light when we note that two widely diverging answers to it have been

[1] Holding that truth is the, or at the very least *a*, goal of science is, in some circles, very controversial. Social constructivists have claimed that this is a myth. Although many of the ideas propounded by social constructivists have something going for them, I remain utterly unconvinced by their claim. Sensible criticisms of their claim, as well as of the arguments adduced, are Kitcher 2001 and Haack 2003.

proposed. On the one hand there are those who hold that there is such a thing as 'the scientific method'. According to this view science stand apart from non-scientific modes of inquiry. According to this view, there is, to borrow a phrase from Ernan Mc Mullin, some such thing as 'the inference that makes science'. (McMullin 1992). The inference that makes science, Popper held, is a deductive one: in science statements are deduced from conjectures, and when such statements turn out to be false, the conjecture from which it is deduced, need to be rejected. The inference that makes science, then, has the form of *modus tollens*:

- if P, then Q
- not Q,
- therefore not-P.

This mode of inference was supposed to make science different from non-scientific modes of inquiry. The idea that there is something that sets scientific inquiry apart from more day to day ways of finding out things is responsible for the honorific aura that has come to surround science. For saying that something has been established scientifically, is not just to give a description of how something was found out, it is also praising *the way* it was found out, and, by implication, praising *what* was found out. It could be compared with saying that Maria is intelligent. To say that is not just to say that Maria scored within a certain interval on a certain test, it is also to *praise* her for that. On the first view, science is epistemologically privileged—it gives us something that non-science can never do.

The other view denies this and holds that although science may be epistemologically distinguished, it is not privileged. The methods of science are, on this view, continuous with the procedures by means of which we try to seek out things in everyday life. As John Dewey once said: "Scientific subject-matter and procedures grow out of the direct problems and methods of common sense", and Gustav Bergmann once described the sciences as "the long arm of common sense". In the same spirit Albert Einstein once remarked that "the whole of science is nothing more than a refinement of everyday thinking", and Percy Bridgman that "there is no scientific method as such"—and he continued "the most vital feature of the scientist's procedure has been merely to do his utmost with his mind".2

According to the second view, there isn't just one type of inference that makes science—the search for a criterion of demarcation was like looking for the fountain of youth. Scientific inquiry isn't cordoned off from everyday ways of inquiry, as the case of *modus tollens* illustrates, for we apply this logical principle in everyday situations as well (If Harry is there, Jane will be there too; Jane isn't there, so Harry isn't there either). On this second view there isn't such a thing as "the scientific method as such" as Bridgman said—what there is, instead, is many and various *helps* to inquiry that scientists have devised. *Helps*, that is, that enable us to do the inquiries of the sort we are engaged in the ordinary affairs of life, *better*.

Let me give some obvious examples of such helps. There are helps to the senses. The empirical sciences depend on experience, but our experience is limited and fragile. Here science helps us to enlarge the scope of our experience by means of numerous sorts of instruments, ranging from microscopes to telescopes, from scanning devices to ECG measuring machines. At the same time these instruments help us to come to terms with the fragility of our experiences, in that they enable others to check our observations. There are, second, helps to seeking out evidence. In inquiry we are interested in evidence, and science can be a help here by contriving and bringing about circumstances in which otherwise inaccessible evidence will become available. Third there a helps in reasoning. Science, especially natural science, involves all sorts of reasoning, some modes of which can be vastly improved by means of the use of computers; calculations too complicated and long-winding

[2] For references, see Haack 2003: 95.

to be made by hand on paper, can be done by them. And there is much more to be said along these lines, but this must suffice by way of making plausible the contention that the methods of science are continuous with every day sorts of inquiry. Instruments, experiments, and computers are helps in doing what we would do even without them.

Since I cannot argue for it properly on this occasion, I will simple announce that my own sympathies are very much on the side of the second, science-is-continuous-with-common sense view. But I hasten to add that although the methods of inquiry in science and every day life are continuous, this doesn't mean that the results of science will always be in accordance of common sense. We know that they aren't.

3.Assumptions that Make Science?

Even if I am right and the *methods* of science are continuous with those of common sense, one may still feel that science differs in an important way from other ways if investigation. It may be thought that even if there is not an *inference* that makes science, there may be *assumptions* that make science—assumptions that are responsible for its success and high status. Those assumptions have proved to be rather hard to nail down, but it has often been said that the proper doing of science requires allegiance to "naturalism", or "materialism", which is supposed to encompass both very broad ontological and very broad epistemological principles. Although hard to nail down in a very precise way, Ronald Giere's rough characterization of them is as good as any other. Ontological naturalism, he says, "implies the rejection of supernaturalism, ... the rejection of any deity such as the Judeo-Christian God, which stands outside nature as creator or actor. Positively, naturalists hold that reality, including human life and society, is exhausted by what exists in the causal order of nature" (Giere 2000: 308). Epistemological naturalism, Giere says, "implies the rejection of all forms of apriori knowledge. ... Positively, naturalists claim that all knowledge derives from human interactions with the natural world. This includes sense perception, but may also include both techniques and technologies of human origin, such as statistical hypothesis testing and microscopes" (idem). I should first like to make some comments about naturalism as characterized by Giere, and then discuss the question whether naturalism is really an assumption of science, i.e. an assumption that needs to be made if science is to be done as it ought to be done.

My first comment is that if ontological naturalism as portrayed is a very substantial metaphysical claim. It states that there is no God, no creator, and nothing outside the causal order of nature. Candidates for being "outside the causal order of nature" would be, I take it: logical and moral principles, numbers, sets and other abstract objects, word meanings. (see Van Woudenberg 2000: 64-66) All of these are supposed to be causally inert, and hence not to be considered as existing. For what reason would one accept this very weighty metaphysical claim? There is no occasion to go into this properly—but it should be noted that if this claim really is, as many think, an assumption of science, reasons for accepting it cannot emerge from scientific investigation. That would be moving in a vicious circle: one first assumes there is no God, no creator, and upon seeing that science offers no arguments for the existence of God or creator (or any of the other items) one concludes that there is no God. If there is to be a basis for ontological naturalism, then, it must be found outside the circle of science. But the typical naturalist won't accept that outside that circle anything is to be found!

Secondly, naturalism as portrayed, implies there is no apriori knowledge, no knowledge from 'reason', knowledge acquired independent from from experience. This rejection, however, amounts to intellectual suicide and the repudiation of almost everything that science has to offer us. This can be rather easily seen. Putative examples of apriori knowledge is knowledge of the principles of logic, such as *modus ponens*, and *modus tollens*. Now scientific reasoning clearly requires that its practitioners acknowledge the truth of these

principles. But if, as the naturalist holds, there is no apriori knowledge, he has no knowledge of the principles of logic, and hence cannot reason by means or in accordance with them, and hence can have no knowledge that involves reasoning of one sort or another. That is why I say that a denial of apriori knowledge is tantamount to intellectual suicide.3

I am now well positioned to discuss the question whether naturalism is an assumption that needs to be made if science is to be done as it ought to be done. As I have just indicated, to accept epistemological naturalism is tantamount to intellectual suicide—and hence it seems utterly wrong to consider it as an assumption that underlies science. As to the claim that ontological naturalism needs to be considered as an assumption that underlies science there are problems along several dimensions. First, from a historical point of view it needs to be stressed that many of the best scientist would be hostile to the very suggestion. Neither Newton, Boyle, Faraday, Maxwell, Darwin, nor Einstein—to mention just a few stars—would accept that. And of course they weren't mistaken about the nature of the scientific enterprise! Second, there is something very strange in the idea that science requires that one assumes naturalism. For science, I should think, is by its very nature an open ended affair, it goes where the evidence leads.4 And how can one assume in advance that science will never lead in the direction of a God, or a creator, or other items that are causally inert? Third, as I have indicated earlier on, there is the question as to the epistemological status of (ontological) naturalism. Why should we think it is true? If naturalists are correct, science itself will give no guidance here, due to problems of circularity.

So, I see no reason to embrace naturalism, and no reason to think that naturalism either is or needs to be considered as an assumption that underlies science.

4. Deep Seated Personal Metaphysical Motivations in Scientists

I have spoken about naturalism as something that so to speak 'institutionally'underlies science. I will now move on and highlight the fact that numerous intellectuals are deeply motivated in their research by metaphysical convictions. Very often this is assessed in a negative way. The last couple of months we have seen in the Netherlands something of a non-debate about the idea that there are signs of design in nature. Piet Borst and Ronald Plasterk never tired of saying that those who toy with this idea have wrong motives, they are driven by the desire to get God back in science, they want to prove scientifically that there is a God, and the like—and of course this was never meant as a compliment. The idea was that the friends of design are pushing a religious agenda, and that they aren't really interested in science at all. Although this last contention can empirically proved to be wrong (Cees Dekker, Ronald Meester and all the other contributors to the book *Schitterend ongeluk of sporen van ontwerp*, are all deeply interested in science) I should like to consider the issue as to how to evaluate the fact that many scientists are motivated by concerns that lie beyond the bounds of science? But let me first offer some real world examples of what I have in mind. The first is a statement by the Harvard biologist Richard Lewontin, the second a quotation from the philosoher Thomas Nagel, the third a statemend by the astrophysicist Fred Hoyle, and the final one a statement by the Belgium mathematician and philosopher of science Jean-Paul van Bendegem.

> [a] "It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world, but, on the contrary, that we are

[3] This has been forcefully argued by BonJour 1998: 5.

[4] In his very interesting book Michael Rea show that characterizations of naturalism are motivated by two conflicting motivations, viz. the motivation to follow science weherever it leads, no holds barred, and the motivation to endorse a substantial metaphysical thesis that itself is not a product of scientific research. See esp. Rea 2002: 50-73.

> forced by our apriori adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counter-intuitive, no matter how mystifying to the uninitiated. Moreover, that materialism is absolute, for we cannot allow a Divine Foot in the door. ... To appeal to an omnipotent deity is to allow that at any moment the regularities of nature may be ruptured, that miracles may happen." (Lewontin 1997: 28, 31)
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> [b] "I want atheism to be true and am made uneasy by the fact that some of the most intelligent and well-informed people I know are religious believers. It is not just that I do not believe in God, and naturally, hope that I am right in my belief. It's that I hope there is no God! I do not want there to be a God; I do not want the universe to be like that. ... My guess is that this cosmic authority problem is not a rare condition and that it is responsible for much of the scientism and reductionism of our time." (Nagel 1997: @@)
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> [c] Fred Hoyle rejected Big Bang cosmology and clung to the steady state theory according to which the cosmos has always existed and will always exist in the state in which we perceive it to. In this he was explicitly driven by the motivation that to accept Big Bang theory would be a way of acknowledging something like a creator—something that he wished not to do.
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> [d] Van Bendegem endorses mathematical finitism and rejects the idea of the infinite because acceptance of the last notion would imply acceptance of the existence of God.

Here we have four intellectuals and scientists who express deep seated convictions—convictions of an anti-religious nature. Lewontin says that a Divine Foor in the door cannot be allowed, Nagel that he doesn't want there to be a God. In the cases of Hoyle and Nagel these convictions motivate the acceptance of certain theories (steady state theory and mathematical finitism) and the rejection of others (Big Bang cosmology and infinitism). Nagel even suggests that the cosmic authority problem is endemous and motivates much of the scientism and reductionism of our time. So there are scientists and other intellectuals whose academic endeavors are motivated by anti-religious convictions. I could easily produce a list of scientists and other intellectuals whose academic endeavors are motivated by religious convictions—convictions such as the existence of a God and creator, the existence of souls, immortality, and the like. My question now is how to evaluate the fact that scientists and other intellectuals are motivated by such deep seated convictions. Does that fact make their work worthless? Would we, or science, be better off if none of us had either religious or anti-religious motivations? Several responses commend itself.

One is that whereas the anti-religious motivations are respectable, the religious motivations are not. And hence that Lewontin, Nagel, Hoyle, and Van Bendegem are doing good to science, whereas the religiously motivated inquirers do only harm. But why would anti-religious motivations be respectable, and religious motivations not? What is the ground for this difference? I maintain that there is no such ground. Lewontin is admirably clear and forthcoming: his naturalism, he says, is apriori, not something to which the methods and institutions of science compel him. Religiously motivated scientists will likewise acknowledge that their religious beliefs are apriori, and uncoerced by the methods and institutions of science. Hence this response is unconvincing.

A *second* response, somewhat in the spirit of Popper, is to say that in science motivations are negligible quantities. What counts in not what the proponents of certain theories and explanations were motivated by (perhaps materialism, or theism, or the wish to propose something that would evoke discussion, etc.) but whether their proposals can survive

empirical scrutiny, opens up fruitful lines of research, has certain theoretical advantages, or possesses any other feature that makes theories and explanations acceptable. Neither personal motivations, nor general philosophical or ideological allegiances that motivated proposed theories and explanations are relevant for science, this response says, all that is relevant is the proposals themselves. Context of discovery and context of justification should not be confounded.

I am sympathetic to this response, but it should not lead us to neglect the fact that within science motivations of the sort now under discussion *do* play an enourmous role. Perhaps these motivations aren't clearly visible in the end products (viz. in the proposed theories and explanations) but not reckoning with them would foolish.5

A *third* response, that has been forcefully articulated by Bas van Fraassen, is that scientific theories have a tendency to forget their motivating origins. It might be the case that certain religious or anti-religious ideas have empirical content, and that certain empirically testable hypotheses can be derived from them. It might even be the case that the hypothesis survives the tests to which it was put. In that case it will continue its way through the learned world, *while whatever it was that motivated it becomes invisible and even superfluous* for its acceptance. The hypothesis doesn't offer comfort to, or strengthen the power of, the original religious or anti-religious orientations that motivated its birth. (Van Fraassen 1996: 150-1) So, if Van Fraassen is right, then even if matematical finitism is the best way to go, this lends no support to Van Bendegem's anti-theism, and even if explanations that were once motivated by naturalism become plausible, this offers no comfort to naturalism as a metaphysical assumption. Scientific theories forget their origins.

A *fourth* response is intimately related to the previous one and inspired by the French physicist Pierre Duhem. A distinction needs to be made, so this response goes, between honest and sober science on the one hand, and on the other the grandiose views that are often claimed to follow from science but which in fact are fanciful extrapolations from it. That is a distinction between honest and sober physics on the one hand and a physicalist worldview on the other; a distinction between honest and sober biology on the one hand, and Dawkin's and Dennet's often brilliant and grandiose extrapolations from that on the other. (Dawkins 1986; Dennett 1995) The point of this response is honest and sober science radically underdetermines the grand scale claims that are often put forward in its name. [we may need

I suggest that the last two of these responses have much to be said for them. I will now move on to the final section and discuss the question whether there are ways to truth, other than science.

5. Science, the only way to Truth?

Well, surely there are such ways. There are many truths that we know that we haven't acquired through science. I, for example, know that it is true that I ate a grapefruit for breakfast this morning, that I live in Baambrugge with my wife and that we have four children. I know, furthermore where my feet are positioned, that I have no broken legs or arms at the moment, that right now I am standing in an up right position, and that I can't see very well right now. I know furthermore truths about my own psychological states, such as that right now I feel a bit dizzy, have a mild pain in my shoulders and long for a glass of water. Next I know that it is true that I should not lie and keep the promises I made, that killing just for the fun of it is deeply wrong, that what King David did to Uriah and Bathseba is very immoral. There are truths about other people that I know, for instance that my friend feels sad, that my neighbor plans to make a trip through Eastern Europe, that my son doesn't

[5] The tradition that gave rise to the Free University rightly placed this fact in full view. See Kuyper 1898; Wolterstorff 1976; Van Woudenberg 1999.

like flying. There are also many simple truths of arithmatic that I know, such as that 2 + 2 = 4, that prime number can only be divided by 1 and themselves, that there is one even prime number, that every number that is greater than 7 is also greater than 3. Next there are many very general truths that I, just like you, happen to know, such as: that there are very many people, that they live on the surface of the earth, that they need food and liquids to keep themselves alive, that they need love and respect, that there are very many countries in which these people live, and that these countries have governments, some of which are very bad, but others of which are tolerably good .... and so I could go on for hours. I mean, I could go on for hours mentioning truths that I know, and that you know, but that we haven't attained through science.

Now earlier on I expressed sympathy for the view that the methods of scientific inquiry are continuous with the ways we find out things in ordinary life. I am not going to take that back, but I will highlight an interesting feature of this continuity—a continuity which will turn out to be a partial, or selective, continuity only. Let us ask ourselves the following question: Could any of the truths that I mentioned a moment ago, and which I claimed weren't atained through scientific inquiry, in principle be found out through scientific inquiry? Are these truths such that eventhough we don't know them thanks to science, we *could* in principle know them thanks to science? Well, let's take a look at some of my examples. I said I know that it is true that I had a grapefruit this morning, and I added that I don't know this truth through science. But would it in principle be possible that I know this through science? Well, I suppose it would. If I came to suffer from a sudden amnesia about today's morning, and I wished to find out what I had for breakfast this morning, then something that could appropriately be called 'scientific inquiry', could teach me the same truth as I now know without investigation. Other truths are like this one. That I have no broken legs or arms I know, I claim, without scientific aid. But I could get to know the same truth through scientific inquiry, for instance through investigation by means of an X-ray machine. But there seem to be other truths that can*not* be found out by anything that could appropriately be called 'scientific inquiry'. It is true that I feel a bit dizzy. But could *science* teach me that? It is true that what David did to Uriah was wicked. But could I come to know that through scientific inquiry (perhaps I could find out in that way what it was that David did to Uriah, but could I find out in that way that it was wicked)? There are, then, clear cases of truths that can, and clear cases of truths that cannot be found out by science. And in between there are cases where it is somewhat unclear what to say. It is true that prime numbers are divisible by 1 and themselves and I know this truth. Could I know it through science? Can we think of any sort of scientific inquiry that leads me to this truth? Well, suppose I never heard of prime numbers, and start to read books about numbers written by mathematicians and so find out what prime numbers are. Would I know this truth through scientific inquiry? Well, does *reading a book* count as scientific inquiry? That is not extremely clear. And there is the further point that the truth at hand really is a stipulative definition, which gives rise to the question whether *giving definitions* qualify as *scientific investigation*. This is unclear too. What this does point to, however, is that 'scientific inquiry', like so many others, is a vague notion.

It might that there are religious truths, putative examples of which would be "God loves me", "God created the heavens and the earth", "God was in Christ reconciling the world with Himself", "God spoke to me" that are such that although some may know them, they aren't obtained by anything that could be called 'scientific inquiry'.6 Those truths, if they exist, would be members of the second class of truths. The fact that they wouldn't be available for scientific investigation would not render them problematic—truths about my own psychological states and about morality aren't problematic either. Or so I maintain.

[6] Impressive accounts of the positive epistemic status of religious beliefs are Alston 1991, Swinburne 1991, and Plantinga 2000.

Some final statements. (1) if what I have said in this section is correct, then we can see that although scientific methods of inquiry are continuous with ordinary ways of inquiry, there are some ordinary ways of getting to know truths that are not continued in science.

(2) If all forms of scientific inquiry are continuous with some mode of non-scientific inquiry, we have to confront the follwing puzzle: why are personal explanations, i.e. explanations that refer to agents that have motives and goals entirely acceptable in non-scientific contexts, unacceptable in scientific contexts. The continuity thesis that I have adumbrated leads in another direction!

(3) We should not forget that there are truths that we can know without doing any any inquiry, neither of the everyday sort, nor of the scientific sort. Truths about our moods would be examples, as would be truths about our immediate environment.

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