



Part 2 of 2

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Questions Science Cannot Answer

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Think, for just a moment, of Aristotle whose experience of the heavens was the experience of any man, perhaps with a little more patient observation. Anyone can look up at the heavens and see them revolve. On a moonless night anyone can see what the poets see, just as Greek scientists could see the configuration of the celestial bodies. Aristotle and Ptolemy did more *thinking* about this than the ordinary fellow did; they did not *see* any more. The science of astronomy as opposed to astrology—the true science of astronomy begins with the investigation of the heavens by apparatus that brings into focus or to awareness data that are beyond the ordinary experience of mankind.

Science begins with investigation. Because science is truly investigative and depends on investigation, it is therefore limited to what can be investigated. Science is concerned with whatever it is that can be investigated—and the only thing that can be investigated is the phenomenal world. Whether the phenomena are sensible to the ordinarily naked faculties of sense, or to those faculties aided by instrumentation, makes no difference. And as a result of this fact, the object of science is the correlation and description of that phenomenal world. The positivist is absolutely right here; the positivist understands science quite well. Whether he understands philosophy is another matter. But he does understand that the scientist, by his methods, can merely give you the correlations and descriptions of the phenomena. He cannot talk about substances and causes at all, except as a practitioner in the laboratory, where he talks like an ordinary man. The scientist has to change character when he goes into the laboratory, but strictly as a scientist he is prevented by his method from dealing with substances and causes.

Let me just give you an indication of the kinds of questions that the method of science, because it is investigative, precludes the scientist from answering. The last thing in the world that a scientist can answer is a question about the ultimate constitution of matter. He may think he can; but this question is beyond investigation. The scientist cannot answer any questions about existence. All the questions about existence—the modes of existing, the grades of being, and essential distinctions among beings—lie outside the competence of the scientist. He cannot answer, by his method, the three great questions that Kant said were the great philosophical questions: the immortality of the soul, the freedom of the will, and the existence of God. He cannot answer any questions about the universe as such; the notion of the universe is not a scientific notion. If there is a universe, that will never be discovered or denied by science. The scientist cannot answer any questions about the nature of knowledge. What knowledge is, is itself a question that is not open to investigation. It is not a scientific question. These are all intelligible questions, but science cannot answer them. Moreover, my position here is not just that science cannot answer them now, but that science cannot answer them ever.

I've mentioned speculative questions. In the practical order, science cannot answer any questions about ends or means, the order of good, questions about what happiness is, the goals of life, questions about virtues and duties. In the field of political or social philosophy science cannot deal with questions about justice, peace, democracy. All these questions are utterly beyond science. Science cannot solve a single moral or political problem now or ever. What is the utility of science? It is very useful, but its utility is entirely technical, as Lord Bacon perfectly understood. Science gives us a mastery of the external world, a technical mastery. It is productive. Lord Bacon said that knowledge is power and that the aim of science is the production of the means. He is absolutely right; that is what science is. It gives us control over the means.

But you recognize that control, through the invention and mastery of means without a right direction of the means to a proper

end, can be more dangerous than having no mastery of the means at all. And that, as I take it, is the condition of the contemporary world. We have more and more control and mastery of means, and less and less ordering of the means to ends, than any other century in the history of mankind.

Now I'll turn to philosophy for a moment to emphasize this contrast. In my early years of teaching philosophy to undergraduates I had a familiar experience, and it repeated itself again and again. About the sixth or seventh week of the course a bright student would come up and say, "Mr. Adler, this is a very interesting course and I'm enjoying it very much, but what's the use of it all?" In the beginning when this question was first put to me, I would try to answer it seriously; then I learned a better answer. I'd look that student directly in the eye and say, "Mr. Jones, in your sense of the word *use*, philosophy is of no use whatsoever." I'd say this because the question that Mr. Jones was asking was posed in terms of the general atmosphere in which he lived. To him, the use of knowledge, meant a technical use—production. Philosophy builds no bridges, cures no illnesses, creates nothing, produces nothing, turns out nothing you can live by or on, produces none of the comforts or conveniences of life. It has no use. Then, when I got this point absolutely clear for the young man, I would say, "If you let me suggest that there is another use for knowledge, then I can indicate the use of philosophy. Do you think that road signs are useful?" He would of course agree. Then I would ask whether maps were useful too. Again he would agree. Then I'd say, "When you want to get somewhere, directions are helpful."

In a similar way philosophy is a guide to life, for there is another use of knowledge besides production. There is the moral, the practical. The practical concerns not just making but doing. And philosophical knowledge, if there is any, is useful in the guiding or directing of doing. But it produces nothing. I can't imagine anyone who would deny the proposition that philosophy has produced nothing. In the whole history of philosophy, nothing has been produced, by the whole or any part of philosophical knowledge. Philosophy is totally nonproductive. Now this is a very striking fact—especially since science is nothing *but* productive. And this too is a very striking fact. There must be some reason science is productive and philosophy is non-productive, and I think it has to do again with the difference in their methods and with the differences in the questions each can answer.

Let me conclude by sharpening the contrast, and by saying what the method of philosophy is. From here on I am going to be entirely negative, because to say positively what the method of philosophy is would be too difficult to accomplish in a brief essay. But the negative point is sufficient. Philosophy is not investigative. By this I mean, it never needs anything more than the ordinary experience of mankind. This is the experience anyone has just by being awake. Another way of saying this is that the philosopher is an armchair thinker. And there is nothing wrong with his being an armchair thinker—so is the mathematician. The

mathematician isn't a scientist in the sense that science is investigative. A mathematician who got out of his chair to look at anything would be no good. Can you imagine a mathematician with a problem saying, "I've got to go out and investigate." You would know at once that he wasn't a mathematician at all. If he couldn't solve the problem sitting in a dark room, or without paper and pencil, he isn't a mathematician. That young men can be prodigies in mathematics illustrates the point, for here you have even less experience than in philosophy. You don't need maturity to be a mathematician; in fact, maturity spoils your being a mathematician. Mathematics is armchair thinking par excellence. And so is philosophy. Now let me illustrate that by my favorite example: freely falling bodies.

You see leaves fall from trees, stones roll down hill, things drop out of windows. Now, if your only question is, What is local motion? you don't need more experience than to see a body leave one place and move to a different place. One of Aristotle's questions is, What is motion in place, what is local motion, what is common to all local motion? But suppose you ask another question: What is the acceleration of the freely falling body? I assure you at this point that ordinary experience is not enough. Yes, you can say that the farther it travels the faster it seems to go, but you aren't sure even of that. Yet suppose you could, with your naked eye, obtain evidence that the greater the distance travelled by a falling body, the faster it seemed to go: would that be a scientific statement? That wasn't the question that interested Galileo in the third day of *The Two New Sciences*. He wanted to know just how a falling body behaved at every infinitesimal point in time or space ; he wanted to know whether in each unit of time or space there are definite increments. Is there uniform motion? Is there uniform acceleration? And if there is uniform acceleration, what is the rate of acceleration?

Galileo devised the inclined plane and the little water clock so that he could measure by pulses in the clock the amount of time elapsed during the space-intervals of a falling body. He could solve this problem only by some recourse to investigation. Ordinary men don't watch balls rolling down inclined planes while holding their fingers on water clocks. Yet Galileo did this, and he made crude tables with a tremendous amount of experimental error in them. He had a crude inclined plane with its surface frictions and a crude clock with its irregularities. He thus obtained a very rough set of data. But though the data were rough he did get the answer to the question about the way bodies fall. This is a simple example of science.

Aristotle could not answer questions about the rate of acceleration. These are questions that are scientific, not philosophical. The essential difference between uniform and variable motion, however, is not a scientific question. Galileo answers this question exactly as Aristotle answers it—without investigation. No investigation in the world could tell you the difference between natural and violent motion or what they are, or what uniform and variable motion are. It is a philosophical matter to define in mo-

tion what is uniform, variable, natural, and violent; and I assure you that those basic definitions with which Galileo begins are taken from Aristotle. No one is likely to change them until the end of time. They don't depend upon investigation. You may be able to think better than Aristotle did about these definitions. If so, then you can change them, but only by thinking about them, not by experiencing more, by getting new data, or by investigating. In other words, philosophy is the very opposite of science. While both faculties, sense and reason, are used in science and philosophy, in science reason serves sense, and in philosophy the sense serves reason. The senses merely give philosophy the common experience which is the basis for our reflections, analyses, and thoughts ; then philosophy develops insight by penetrating the phenomena. Thus, questions about substances and the causes of things, questions the scientist cannot answer, the philosopher may be able to.

If I were talking in this manner to a classroom of positivists, I would, of course, see a big grin on their faces, which says, "That's what you say. You merely *assert* that philosophy can answer questions about the substances and causes of things." And I realize that I haven't established my point—I merely stated it. But I have one reply to these positivists, one example of a question that science cannot answer but that philosophy can answer, even if answers may differ according to philosophical schools. And this is the question we have been discussing here, the question concerning the relation of science to philosophy. I don't care what the *answer is*. I say that any answer to that question is a *philosophical answer*. Whatever way one answers it, he answers without an appeal to investigation. So if one has any answer, no matter what the answer is, true or false, he at least has a philosophical answer.

In the practical order, as a consequence of these points in the speculative order, there is a work that philosophy alone can do without the aid of science. It can answer a whole range of practical questions—with knowledge, not with opinion—in the fields of ethics and politics.

If one went on beyond science and philosophy to the problems of theology or religion, one would encounter the distinction between natural and supernatural knowledge, or between that knowledge which man acquires by means of the operation of his natural faculties, and that knowledge which is received by man without effort on his part. What the man of faith claims to have is knowledge which he does not in any way achieve by the exercise of his natural faculties; it is strictly a knowledge that is received as a gift. Now the interesting thing about the claim that the man of faith makes is that it is irrefutable. I assure you that neither the scientist nor the philosopher can say anything about it. If the philosopher could prove that what the man of faith, *qua* man of faith, says is true, the man of faith would be wrong. If the philosopher could prove that faith exists, faith wouldn't exist. The philosopher could show the intrinsic possibilities of faith. He certainly shows that it is possible for some knowledge to get into man's intellect by divine gift. The philosopher can show the possibility of faith, but that is as far as the philosopher can go. If

the man of faith does not claim knowledge beyond rational proof, then I don't see the meaning of the word "religion" at all. I think the phrase "Eastern religions" is a self-contradictory phrase, because none of these religions claims to have any revealed knowledge at all. Philosophy and religion in Chinese culture are indistinguishable. I don't know why we call it religion, for nothing is claimed to be known here that is not known by natural means. And unless such a claim is made—that something is known without recourse to natural means—then religion has no claim whatever for a separate status.

Now in the practical order, as opposed to the speculative order, religion and theology have a peculiar character. Take religion rather than theology here. You see that the utility of science is production, and the utility of philosophy is direction. Religion also offers direction, but it gives us, in addition, the grace to follow directions.

In the history of the West, there has been a tendency to confuse the questions that belong respectively to science, philosophy, and religion. I get angry at the so-called orthodox Aristotelians who read Aristotle as if every word were true. In Aristotle, science, philosophy, and religion are confused. Since Aristotle doesn't know their distinctions, they are all inchoately mixed. He doesn't know that he is a different fellow in the *Historia Animalium* and the *De Partibus* from what he is in the *Metaphysics*. We find that the opening part of the *De Partibus Animalium* is quite different from the seventh and eighth books of the *Metaphysics*. But Aristotle doesn't know it, in the sense of saying, "Now look, I said that before and now I'm saying this, but I'm saying two different kinds of things. My methods are different, my problems are different."

When we get to the Middle Ages, we see that the achievement of St. Thomas was his persistent effort to get the line between philosophy and theology clear, to know what the true questions of sacred theology are, and how they differ from those of natural philosophy and metaphysics. But even St. Thomas is very unclear and confused about the proper line between philosophy and science, between what we call the investigative sciences and natural philosophy. His *Commentary on the Trinity of Boethius* (qq. 5 and 6) has lots of insights. But St. Thomas doesn't know about science; it's too early. He doesn't know enough about the Greek science of the Alexandrian period. And above all, he doesn't know about the sciences that were going to develop at the end of his century. When you get to modern times, when things should be better, things get worse because of the rise of scientism and the discard of philosophies and theologies. Yet, let me say that the possibility of a better state of affairs in the twentieth century is clear. We do have science now, existentially, as a quite distinctive enterprise. We can look at what it is doing. We don't have much philosophy left to look at, but we can remember what it was like in the past. Then there are the remnants of theology. It should be possible in the twentieth century to begin to get good order among our disciplines, to become aware of the limitations

of man's three main efforts to know the truth. My own feeling is that this good order depends in a special way on knowing the differences between philosophy and science.



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