

The Idea of Salvation Through Science

Mary Midgley

What does it mean to say that we live in a 'scientific age' when that is contrasted with 'a religious age'? Or again, to say that 'Because we live in a scientific age we don't need religion'?

What sort of competition is this, in which two apparently very different kinds of concern are seen as embattled? In particular, what does 'scientific' mean when one talks of a scientific age, and just what are the needs that science is now held to satisfy? (The spotlight is usually turned on religion, but I think we should sometimes turn it the other way). These are not just disinterested, sociological questions. We have all been hearing the voice that expresses this rather mysterious faith in science all our lives. The force with which it comes home to us must, I think, show that some of the things it is saying are important. Yet in a dozen obvious ways what it says is muddled and wildly wrong.

I must talk here somewhat crudely, because I am talking about something crude. The voice is part of the imagery out of which our conscious thought arises, merging into a dark background of which we are hardly aware. It is full of crude notions. But they can be very influential. Let's have a closer look at this one.

In what sense, then, can our age be called a scientific age, when we don't call it a musical or a historical age? Certainly not in the sense that we all know a lot of science; most of us don't. Nor is the point just that a lot of science is being done. It is, but a lot of other things are being done too. Physical science does of course have a huge practical importance in our lives (much more so than history or music). That might lead us to talk of living in a technological age. But this doesn't seem to cover all that is meant by calling it scientific. And the stress on technology surely couldn't, on its own, conflict with religion.

The idea must be, of course, that something called science is shaping our thought, shaping our whole attitude, that it, and no other activity, is supplying a faith by which we can live. Such scientific facts as we know certainly don't constitute such a faith. The authority of science seems to be essentially moral. It acknowledges an attitude, a vision, an ethic associated with science, not science itself. (That is why its claims can extend to people who themselves know very little science.) So what is that attitude? It is seen (I suggest) as centring on a kind of ascetic and stoical virtue, believed to be present in science and

absent in other activities, including religion - a special kind of honesty, modesty and temperance —

Honesty The kind of honesty that won't deal in blind hopes -that won't offer illusions to other people, nor rely on them for itself.

Modesty Unpretentiousness - the power to refrain from claiming to know more than one does, or to be more important than one is.

Temperance The kind of temperance that refrains from enjoyable day-dreams. Willingness to face a bleak, but real, world, rather than make up cheerful stories about it. Realism.

These austere, negative virtues have been compellingly preached as the special contribution of science by many powerful prophets - T.H. Huxley, Bertrand Russell, Jacques Monod and countless others. They have indeed been ideals genuinely central to the thinking of great scientists from the Renaissance on. More widely, these virtues have played an important part in the whole moral thinking of the Enlightenment. They are essential, not just to good scientific practice, but to good practice of every kind.

But the facts are, of course, a bit more complex than the preaching. Stereotypes like this are unreliable. *Unfortunately, these virtues are not inseparable from the practice of science and sometimes they have been quite remarkably absent from it.* I shall discuss shortly some striking examples of modern daydreams, issued by scientists as scientific, which noticeably lack these virtues. And it should be obvious (though I shan't discuss it) that these stoical virtues are, and always have been, essential for a lot of non-scientific activities too. There seems no reason at all to say that they are absent from religion, except where it's bad religion, any more than they are absent from history, philosophy, mathematics or music. They are not a private domain of science.

Moreover, even when these essentially negative virtues are present, they are only a rather small part of the moral scene, a defence against certain special evils. In a scientific context, they are often summed up in the concept of Economy or Parsimony. Entities must not be multiplied beyond necessity; hypotheses must not branch out beyond what is strictly needed for an explanation,... This is quite right. But the hard question often is, what kind of explanation is needed in this particular situation?

The ideal of Economy only works if one knows just what one needs. Otherwise, economy becomes a mere one-sided obsession, as it is for misers. You save, but you have nothing to save *for*. The positive insights

that show the nature of the need are far more deeply important than the negative virtues. On its own, scientific minimalism is just obsessive intellectual anorexia - the inability to absorb anything.

Recently, this pursuit of economy has greatly occupied scientists and philosophers of science, leading them to contract the idea of science remarkably. Popperian barbers, following William of Occam, have reacted sharply against the bold Marxist and Freudian polymaths of the thirties. They have increasingly shaved off what they see as the messy beard of science. Aiming to confine the *name* 'science' to particular facts established by standard methods in laboratories, with a minimum of background theory, they have blackballed all wider speculation, more particularly any kind that tends to relate physical science to other disciplines, or to suggest a whole world-picture. In the search for unpretentious modesty, they take pride, like other academic specialists today, not in answering general questions, but in rejecting them as having 'nothing to do with science'. The asker of unwanted questions is always made to feel unprofessional.

This move largely follows the path that Russell took in his 'logical atomism', when he insisted that only particular propositions really have meaning because only particular items are really real, wholes made up of these particulars aren't real at all. You shouldn't, for instance, talk about 'the universe' there is no such thing. (This is, of course, the same positivistic approach which holds that 'there is no such thing as society' that, the state is a logical construction out of its members' and so forth.)

But, as Russell's critics quite rightly pointed out, thought doesn't work this way. In order to reach the supposedly atomic particular propositions in the first place, we need a wide general framework of concepts. To say 'this is carbon', I must know chemistry—and so forth. Particular and general ways of thinking develop together. For both, we always need some wider, enclosing world-picture, some imaginative vision. Indeed, normally we need some myth, some symbolic expression of that vision. Russell had his myths all right, he just wasn't critically aware of them, and neither are his present-day followers. The asceticism is bogus, because the indulgence is hidden under the counter. Logical atomism is itself a wildly ambitious piece of metaphysics, carrying its own myth.

We'll come back later to the effect of this lack of self-knowledge. But the point I want to draw your attention to first is how damaging this minimalism is to the idea that science is the dominant, formative element in our culture. 'Science' in this narrow sense can't include the scientific temper and attitude, nor even establish connexions with them. It has (so to speak) no outside hooks on it, no slots for alien concepts, no

Foreign Ministry for establishing relations with other studies. Most scientists today, especially in the UK, not only are not educated to connect their subject with anything outside it, but have been actively trained to see this isolation as a virtue. It is possible to resist this process—Stephen Jay Gould manages to do it all the time, so do some other historically trained scientists. But it is terribly hard.

So, the 'scientific attitude' mostly goes about on its own—I don't want to say like a chicken with its head cut off, but in an uncontrolled manner, like any attitude that doesn't have to relate itself to forces outside it. Inevitably, it gets out of date. It is still obsessed with opposing religion. It still speaks the language of that great controversialist T.H. Huxley, echoing his quite local political battles on behalf of an underpaid and undervalued profession (as science really was then) for political power against a socially-dominant church. It still supposes, in defiance of the evidence, that all Christians are Creationists. It still accepts the wildly unhistorical stories told by (for instance) Brecht about the Galileo affair and by the aging Huxley about his youthful row with Bishop Wilberforce.

But its most serious effect is the negative one that it prevents attention to more relevant things. The distinctively scientific attitude ought surely by now to be concerned above all with the relation between science and *politics*—between science and the various forms of power, especially money—between scientists and their paymasters, between the aims of science itself and the various outside aims that it finds itself serving. Many scientists do now occupy themselves with these things; the environmental crisis is steadily increasing their number. But the idea still persists that on points like these, science itself ought always to be neutral.

Yet, in contrast to that idea, the thought that the scientific attitude is not neutral on such points, that it really can guide our culture, is still very strong. It was powerfully expressed, during the Second World War, by C.H. Waddington in an influential book called *The Scientific Attitude*. Waddington was attacking just this contraction of 'science'. He wanted to reformulate the Scientific Attitude so as to fit it again for its larger function. How large? He replies —

Science *by itself* is able to provide mankind with a way of life which is, first, self-consistent and harmonious, and secondly, free for the exercise of that objective reason on which our material progress depends. So far as I can see the scientific attitude of mind is *the only one* which is, at the present day, adequate in both these respects. (p.170, emphasis mine)

Which science (however) is going to do all this? (There isn't actually an occupation called 'science'). At present, the answer is

usually either evolutionary biology or physics. Physics looks plausible in the same way as mathematics—liable to produce an abstract formula that explains everything else. Evolutionary biology, by contrast, looks as if it might, itself, somehow be made large enough simply to include all other knowledge.

That was really what Waddington thought. ‘Science’ for him included Marxist and Freudian theory and almost any other kind of ideas that could be called ‘modern’, such as those underlying the poetry and architecture of the thirties. And he was willing to try, as a scientist, to answer the questions they raised. So were the Marxist polymaths—Needham, Haldane, Bernal. So were Julian Huxley and Konrad Lorenz and Jeans and Eddington and other scientists of that day. The dialogue could quite well have been developed further—only other scientists, encouraged by Karl Popper, declared it all unscientific.

Yet the idea of a dominant scientific attitude, centring on evolutionary biology, still did not die, nor did academic imperialism. In 1975, Edward O. Wilson issued his fighting manifesto in *Sociobiology*. Here academic anorexia was replaced by bulimia. Biology opened its mouth very wide indeed —

It may not be too much to say that sociology and the other social sciences, as well as the humanities, are the last branches of biology waiting to be included in the Modern Synthesis. One of the functions of Sociobiology, then, is to reformulate the foundations of the social sciences in a way that draws these subjects into the modern synthesis. (p.4)

The time has come for ethics to be removed temporarily from the hands of the philosophers and biologized. (p.562)

And so forth. It is evident in such passages that Wilson doesn’t know that any systematic thought goes on anywhere outside his own discipline. So he expected no difficulties in Sociobiology’s conquest of the learned world. But in his next book, *On Human Nature*, he reached out beyond academe to the still bolder project of displacing religion —

The time has come to ask; Does a way exist to divert the power of religion into the service of the great new enterprise that lays bare the sources of that power?...Make no mistake about the power of scientific materialism. It presents the human mind with an *alternative mythology* that until now has always, point for point in zones of conflict, defeated traditional religion. Its narrative form is the epic, the evolution of the universe from the big bang. (OHN p.196)

To confirm this, Wilson quotes God's questions to Job —

Have you descended to the springs of the sea...have the gates of death been revealed to you, ...have you comprehended the vast expanse of the world?

and replies —

Yes, we do know and we have told. Jehovah's challenges have been met and scientists have pressed on to solve even greater puzzles. The physical basis of life is known; we understand approximately how and when it started on earth. New species have been created in the laboratory...

—and so on. Again, in the concluding passage of the book —

The true Promethean spirit of science...constructs the mythology of scientific materialism, guided by the corrective devices of the scientific method, addressed with precise and deliberate affective appeal to the deepest needs of human nature, and kept strong by the *blind hopes* that the journey on which we are now embarked will be farther and better than the one just completed.(p.209) (Emphases mine).

Thus, in spite of Popper and the march of specialization, Wilson still wants to count some version of the vast, colourful, speculative stories that can be built round the themes of materialism and evolution inside the heading of science. But this cannot work. The stories told by the various particular sciences are now distinct and separate, they don't always agree, and there are often huge gaps between them. They cannot serve really as the Pied Piper to propagate the myth he offers.

What, however, actually is that myth? It has, I think, three components, which he doesn't separate at all. (1) There is genuine wonder at the glory of the natural world. This is entirely honourable and proper, and surely is a real contribution of science to human spiritual life, a serious part of our salvation (2) There is an absurd over-estimation of the contribution of his own science, and of any science, to the understanding of that world. And (3) There is a blind hope, a groundless hope, not justified by anything in any physical science, of an ever-expanding, ever-improving human future on earth.

For this future, evolutionary biology and cosmology are brought together in a new and rather startling amalgam. Since the Big Bang put the drama back into cosmology, the word 'evolution' has again begun to

be used far beyond the biological context, for the story of the whole universe. This usage tempts cosmologists to slip back, apparently without embarrassment, into the traditional language of purpose that Galileo so sternly forbade them to use. Thus, Stephen Hawking ends his *Brief History of Time* by assuring us that his kind of cosmological speculation will enable us finally to understand 'the mind of God'. And thus Professors Barrow and Tipler describe the aim of the whole cosmic process —

At the instant the Omega Point is reached, life will have gained control of all matter and forces, not only in a single universe, but in all universes whose existence is logically possible; life will have spread into *all* spatial regions in all universes which could logically exist, and will have stored an infinite amount of information, including all bits of information which it is logically possible to know. And this is the end.

Footnote. A modern-day theologian might wish to say that the totality of life at the Omega Point is omnipotent, omnipresent and omniscient.

(*The Anthropic Cosmological Principle*, p.677. Emphasis is the authors')

What kind of 'life' is it that will bring off this feat? It is Us, assisted by Our Machines. 'We' shall become immortal and eventually deified, carrying to completion the information-grabbing activity which is conceived as the essence of science. For this purpose, we shall have been transformed into computer programs and colonised outer space, which we shall completely fill. Why it is thought to be such a good thing to store all this information is not explained. As Aristotle pointed out, storage is for use. Storage itself cannot be the aim of anything, let alone everything.

The real point of getting into this bizarre situation is evidently not the information-gathering, but to avoid eventual death. It is explicitly held that life has no meaning at all for us now unless we can be sure that our species will go on for ever. So another, very distinguished physicist (Freeman Dyson) has thought up this way of dodging the second law of thermodynamics—which, as usually understood, would prevent people existing for ever—by turning our descendants into computer programs running on very simple forms of matter such as cosmic dust, as in Fred Hoyle's story *The Black Cloud*. They may not (he concedes) be able to do very much, because energy will be rather scarce and there won't be

anything else going on around them. But they can save effort by living very slowly and hibernating a good deal of the time...When awake, presumably, they can do mathematics and talk quietly about it to each other...? This, says Dyson, yields the happy result that —

No matter how far we go into the future, there will always be new things happening, new information coming in, a constantly expanding domain of life, consciousness and memory .

(‘Time Without End; Physics and Biology in an Open Universe’
Review of Modern Physics, 51, p.447, 1979)

Conclusion

Need we worry about these rather strange outgrowths on the body of modern science? Do they really matter?

I hope it is obvious that I am not making an attempt to discredit science itself. Most scientists don’t write this stuff; many deplore it. But the excesses aren’t just accidental. They have grown out of a confused and changing conception of science. An earlier, far more hopeful, idea of it has aroused expectations which today’s narrow specialisation makes it quite impossible to satisfy.

The scientists I have quoted are not just popularizers, marginal to the profession. They are all respected members of it, some of them very distinguished ones. And though learned reviewers may sniff at these ideas, scientific journalists transmit them widely and readers are surely likely to remember them. They are always being incorporated into science-fiction, which is, it seems, one of the most widely-read forms of fiction at present. And if we say ‘but they still aren’t really believed’, I think we are being a bit naive about the way belief works. What is transmitted is the world-picture, and it has a real influence on people’s thinking.

There are just two parts of this world-picture which may be of special interest to people concerned about religion—two beliefs which are often thought of as scientific. They are both groundless superstitions, but they tend not to be recognised as such because of the moral stereotype I started from—people don’t expect, today, to hear superstitions from scientists. They are (1) the belief in inevitable predestined future progress and (2) the conviction that people are really the same as computer-programs. Both seem to me to be aspects of that recurrent problem in Western culture—the tendency for orgies of spiritual self-indulgence to follow on ascetic thinking which has been carried to unreal excess.

St Thomas, as I understand, faced a situation in certain ways similar—an apparent choice between an ascetic, Augustinian, world-denying attitude which struck many people as unrealistic, and a seductive, Pagan alternative that might make a more modest form of earthly virtue look possible. By working out more fully Aristotle's deep conviction of continuity between soul and body, between feeling and reason, between form and matter, between physical matter and the divine, St Thomas managed to salvage something of the best of both worlds. This same sense of continuity seems to me to be what is needed in dealing with the aberrations I have been describing, which have flowed from an increasingly confused and disintegrating ideal of science.

Visions of Europe

Aidan O'Neill

The church of San Miniato al Monte lies on a hill on the north side of the Arno, overlooking the city of Florence. It is dedicated to a deacon, reputedly the son of the king of Armenia, who was martyred in the city around 25 A.D. during one of the imperial persecutions. The church which presently stands on the site was begun in 1013. It is one of the oldest and certainly one of the most beautiful churches in Florence—a perfectly preserved Romanesque basilica with a striking façade of mosaics and green and white marble in geometric designs. The church is attached to a monastery of Olivetan monks and their services attract large congregations, both tourists and native Florentines.

At Mass opening the Octave of prayer for Christian unity this year, the abbot of San Miniato preached a sermon on the Christian vision of Europe. He spoke of the two great scourges which had afflicted Europe in this century, Nazism and Stalinism. He talked of the post-War division of Europe at Yalta by the agreement of the triumvirate of Churchill, Stalin and Roosevelt. He presented this division as a rending of Europe in two, as the creation of a dualism in the world which was antithetical to