CHAPTER SEVEN
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Our Global Problems And What We Need To Do About Them

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In this essay I argue that, in order to solve our grave global problems we need to bring about a revolution in our universities. First, however, I set out to depict the religious dimension to our problems. We need to revise our ideas about the nature of God.

Cutting God in Half – And Putting the Pieces Together Again

Traditionally, God is a Being who created the universe and everything in it, a Being who is all-powerful, all-knowing, and all-loving, the source of all value, a Being who cares, profoundly, for the salvation of our souls. This is, I take it, a traditional central tenet of Christianity, Judaism and Islam.

But there is a problem. An all-powerful, all-knowing Being, if He exists, would be responsible for all suffering and death caused by natural phenomena. Such a Being would even be co-responsible for suffering and death caused by people, in that it would be God's decision not to render the poison or the bullet harmless at the last second. Far from being all-loving, such a Being would be a monster infinitely more evil than a mere human Hitler or Stalin.

The traditional God cannot exist. It is refuted by the most elementary facts of human experience.[2]

At once the question arises: How can this traditional conception of God be improved so that (a) as much as possible of what is of value in the traditional notion is preserved, (b) the above objection to the existence of God is overcome, and (c) there is a good chance that God, in this new sense, does exist?

My proposal is that we need to cut God in half. We need to sever what may be called the "God-of-Cosmic-Power" from the "God-of-

Cosmic-Value". It is fusing these together to form the one Being of the traditional God that creates the insuperable problem of an all-loving God who is also utterly evil.

The God-of-Cosmic-Power is Einstein's God. It is the underlying unified pattern of physical law in the physical universe, inherent in all phenomena, that is – together with initial conditions – responsible for everything that goes on. The God-of-Cosmic-Power has some of the attributes of the traditional God. It is all-powerful, eternal, and omnipresent. But It is an It – and can therefore be forgiven all the terrible things It does. It cannot know what It does.

The God-of-Cosmic-Value is what is of most value associated with our human world – or the world of sentient life, more generally. It is what is best in us. It is that potentially or actually aware and loving self within us that sees, feels, knows and understands, at least partially, and either *does* intervene to prevent disaster, or is powerless to do so. The God-of-Cosmic-Value is the soul of humanity, embedded in the physical universe, striving to protect, to care for, to love, but all too often, alas, powerless to prevent human suffering.

We have good reasons, I maintain, to hold that both the God-of-Cosmic-Power and the God-of-Cosmic-Value do indeed exist. Elsewhere I have argued that once we get the nature of science properly into perspective it becomes clear that science has already established that the God-of Cosmic-Power exists – insofar as science can establish anything theoretical at all.[3] And as for the God-of-Cosmic-Value, we may claim we know It exists insofar as we experience that which is of value and have, within us, the capacity at least to live life lovingly.

Cutting God in half in the way I have proposed, in order to arrive at a viable notion, creates, however, a profound new problem: How are the two halves to be put together again? How is it possible for the God-of-Cosmic-Value to exist embedded in the God-of-Cosmic-Power – the physically comprehensible universe? How can we understand our human world, embedded as it is within the physical universe, in such a way that justice is done to both the richness, meaning and value of human life on the one hand, and what modern

science tells us about the physical universe on the other hand? *How can what is of value associated with our human world exist and best flourish embedded as it is in the physical universe?*

This problem (created by cutting God in half) is, quite simply, the most general and fundamental problem confronting humanity. It is a *philosophical* problem – indeed, the fundamental problem of philosophy: How is it *possible* for our human world, imbued with sensory qualities, consciousness, free will, art, science, and much else of value, to exist embedded in the physical universe? (This embraces, as subordinate issues, the mind-body problem, the problem of free will, problems of knowledge, of perception, of the philosophy of science, of biology and evolution, even problems of moral and political philosophy, problems of language, culture, history, abstract entities, time, space and causation.) The above is also a fundamental problem of *knowledge* and *understanding* much more generally – the basic problem of science: What is the nature of the physical universe? How precisely do features of our human world, such as perceptual qualities, consciousness, and life more generally, fit into the physical universe? The problem can also be regarded as a fundamental problem of *living*, of *action*: How can we help what is of value in existence, actually and potentially, to flourish? What do we need to do, as individuals, so that what is of value to us may flourish? And what do we need to do, collectively, socially and politically, so that what is of value to people everywhere, to humanity, may flourish? The problem of fitting the God-of-Value into the God-of-Cosmic-Power (the underlying unified It of the physical universe) is not only a conceptual problem, a problem of knowledge and understanding; it is also a *practical* problem, the most general, fundamental practical problem that there is: to help the God-of-Value, what is of most value in us, to exist in the physical universe in ways that are less painful and constrained, more exuberant and joyful, more just, peaceful and noble, than at present. Once we recognize that the God-of-Value is what is of most value, actually and potentially, in us, it becomes our most profound religious obligation to help what is of value in us to flourish in the real world.

Elsewhere, I have discussed the philosophical and theoretical aspects of this problem in some detail.[4] My concern in what follows

is to discuss the most urgent practical aspects of the problem that confront us all – the most urgent global problems confronting humanity.

Global Problems

Can humanity help the God-of-Cosmic-Value to flourish, ensnarled as it is within the remorseless grip of the Cosmic-God-of-Power? Can we, in other words, successfully realize what is genuinely of value to us in the real world – more successfully, at least, than we have managed to do so far, up to the first decade of the 21st century? Much depends, I will argue, on whether we succeed in putting wisdom-inquiry and aim-oriented rationality into practice in academia, and in life.

As I have already stressed, we are confronted by grave global problems. There is the problem of vast differences in wealth around the globe, something like a third of the world's population living in conditions of dire poverty, without enough to eat, safe water, proper shelter, health care, education, employment. Over 9 million children die every year from preventable causes – some 25,000 every day.[5] There is the problem of war, over 100 million people having died in wars during the 20th century, which compares unfavourably with the 12 million or so who died in wars in the 19th century. And we have not been doing very well in the first decade of the 21st century. There is the problem of the spread and stockpiling of deadly modern armaments, even in poor countries, and the ever-present threat of their use by terrorists or in war, whether the arms be conventional, chemical, biological or nuclear. Nuclear proliferation is an especially grave problem, India, Pakistan and north Korea having recently acquired the bomb, and other nations, such as Iran, likely to acquire the bomb soon. There is the long-standing problem of the rapid growth of the world's population, especially pronounced in the poorest parts of the world, adversely affecting efforts at development. There is the problem of the progressive destruction of tropical rain forests and other natural habitats, with its concomitant devastating extinction of species. And there is the horror of the AIDS epidemic, again far more terrible in the poorest parts of the world, devastating millions of lives, destroying families, and crippling economies.

And, in addition to these stark global crises, there are problems of a more diffuse, intangible character, signs of a general cultural or spiritual malaise. There is the phenomenon of political apathy: the problems of humanity seem so immense, so remorseless, so utterly beyond human control, and each one of us, a mere individual, seems wholly impotent before the juggernaut of history. The new global economy can seem like a monster out of control, with human beings having to adapt their lives to its demands, rather than gaining support from it. There is the phenomenon of the trivialization of culture, as a result, perhaps, of technological innovation such as TV and the internet. Once, people created and participated in their own live music, theatre, art, poetry. Now this is pumped into our homes and into our ears by our technology, a mass-produced culture for mass consumption; we have become passive consumers, and the product becomes ever more trivial in content. And finally, there is the phenomenon of the rise of religious and political fanaticism and terrorism opposed, it can seem, either in a faint-hearted and self-doubting way, or brutally by war and the suspension of justice, apparently confirming Yeats's lines "The best lack all conviction, while the worst are full of passionate intensity".

Most serious of all, there is the impending crisis of global warming. There is the real possibility that average global temperature will rise by 3 to 6 or even 10 degrees centigrade by the end of the century, rendering vast tracts of the earth's surface, at present densely populated, uninhabitable, sea levels rising by a meter or so, flooding many great cities of the world. Reports from experts about the pace of global warming – shrinking of ice at the poles, contraction of glaciers – grow steadily more alarming year by year.

We have known about global warming for a long time. John Tyndall discovered that carbon dioxide is a greenhouse gas as long ago as 1859, and Svante Arrhenius realized in 1896 that we would cause global warming. Living in Sweden, he thought it would be a good thing. But the first person really to discover that we are *causing* global warming was Guy Callendar, who gave a lecture to the Meteorological Society in London on the subject in 1938. He

was not believed. Of course, 1938 was not the best time to make the announcement! Any lingering doubts should have been removed, however when, in the early 1960s, Charles Keeling made extremely accurate measurements of the increase in carbon dioxide in the atmosphere.[6]

What is so shocking is that it has taken so long - several decades - for humanity to begin to take the impending threat seriously; let alone work out what needs to be done; let alone do it.

Global warming threatens to intensify all our other global problems - apart, perhaps, from that of rapid population growth (which might be curtailed by starvation, floods, drought, and war, all provoked by global warming).

If we are to realize what is genuinely of value to us in life more successfully than we have in the past we must, at the very least, discover how to resolve these immense global problems in very much more humane, intelligent, and effective ways than we have managed to do so far.

The Role of Modern Science and Technology

Modern science and technology have made immense contributions to the enrichment of human life. The modern world is inconceivable without them. But they have also made possible all our current global problems. Modern science and technology make possible modern medicine and hygiene, modern agriculture and industry which, in turn, have led to population growth, destruction of natural habitats and rapid extinction of species. Modern science, technology and industry being developed in some countries, but not in others, have led to immense differences in wealth around the world. Science and technology have made modern armaments possible, and the lethal character of modern warfare. As a result, the more scientifically advanced countries have been able to impose their will on those without modern science. Even AIDS is spread by modern methods of travel, made possible by modern technology. And of course global warming is a product of modern industry and agriculture, made possible by modern science and technology.

It is not just that modern science has made these things *possible*. In a perfectly respectable sense of "cause", all our global problems have been *caused* by modern science and technology.

It may be objected that it is not *science* that is the cause of these global problems but rather the things that we *do*, made possible by science and technology. This is obviously correct. But it is also correct to say that scientific and technological progress *is* the cause. The meaning of "cause" is ambiguous. By "the cause" of event E we may mean something like "the most obvious observable events preceding E that figure in the common sense explanation for the occurrence of E". In this sense, human actions (made possible by science) are the cause of such things as people being killed in war, destruction of tropical rain forests. On the other hand, by the "cause" of E we may mean "that prior change in the environment of E which led to the occurrence of E, and without which E would not have occurred". If we put the 20th century into the context of human history, then it is entirely correct to say that, in this sense, scientific-and-technological progress is the cause of our distinctive current global disasters: what has changed, what is new, is scientific knowledge and technological know-how, not human nature. Give a group of chimpanzees rifles and teach them how to use them and in one sense, of course, the cause of the subsequent demise of the group would be the actions of the chimpanzees. But in another obvious sense, the cause would be the sudden availability and use of rifles – the new, lethal technology. Yet again, from the standpoint of theoretical physics, "the cause" of E might be interpreted to mean something like "the physical state of affairs prior to E, throughout a sufficiently large spatial region surrounding the place where E occurs". In this third sense, the sun continuing to shine is as much a part of the cause of war and pollution as human action or human science and technology.

In short, if by the cause of an event we mean that prior change which led to that event occurring (the second of the above three senses), then it is the advent of modern science and technology that has *caused* all our current global crises. It is not that people became greedier or more wicked in the 19th and 20th centuries; nor

is it that the new economic system of capitalism is responsible, as some historians and economists would have us believe.[7] The crucial factor is the creation and immense success of modern science and technology. This has led to modern medicine and hygiene, to population growth, to modern agriculture and industry, to habitat loss and rapid extinction of species, to pollution of land, sea and air, to world wide travel (which spreads diseases such as AIDS), to global warming, and to the destructive might of the technology of modern war and terrorism, conventional, chemical, biological and nuclear.

It is tempting to blame modern science and technology for our troubles. But that misses the point. We need modern science and technology, to help us know what our problems are, and to help us solve them. We would not know we were causing global warming without modern science (even if there would be no global warming if there were no science). The fault lies, not with science *per se*, but rather with scientific and technological research *dissociated from the more fundamental quest to discover how to help humanity solve its global problems and make progress towards as good a world as possible*.

For centuries, universities have sought, first acquired knowledge and then, secondarily, to apply it to help solve social problems. In other words, they have put what may be called *knowledge-inquiry* into academic practice. But knowledge-inquiry, judged from the standpoint of helping to promote human welfare, is grossly and damagingly irrational. It is our long-standing implementation of knowledge-inquiry that is, in part, responsible for the creation of our global problems, and our current incapacity to resolve them. We need urgently to bring about an intellectual/institutional revolution in our universities so that they come to put what may be called *wisdom-inquiry* into practice – both more rigorous and of greater potential human value. Wisdom-inquiry would put problems of living at the heart of the academic enterprise, the tackling of problems of knowledge emerging out of and feeding back into sustained imaginative and critical thinking about what our problems of living are, and what we ought to do about them. Social inquiry and the humanities would seek to help humanity build cooperatively rational methods

of problem-solving into the fabric of social and political life, so that we may gradually acquire the capacity to resolve our conflicts and problems of living in more cooperatively rational ways than at present.

If we are to make progress towards as good a world as possible we need to learn how to do it, and that in turn means that we possess institutions of learning rationally organized and devoted to helping us do it. It is this that we so disastrously lack at present, and so urgently need.

Outline of Argument in Support of Wisdom-Inquiry

Elsewhere, I have expounded the arguments in support of wisdom-inquiry in some detail.[9] Here, I will be as brief as I can.

There are two arguments, the first appealing to a "problem-solving" conception of rationality, the second to an "aim-pursuing" conception. The second argument builds on the first. They establish, I claim, that knowledge-inquiry is damagingly irrational in a wholesale, structural way. Wisdom-inquiry emerges when knowledge-inquiry is modified just sufficiently to cure it of its gross irrationality.

I assume that a proper, basic aim of academic inquiry is to help promote human welfare, help people realize what is of value to them in life, by intellectual, technological and educational means, it being recognized that knowledge and understanding can be of value in their own right.

Knowledge-inquiry holds that, first, knowledge must be acquired; once acquired, it can be applied to help solve social problems. In order to be of value to humanity, academia must acquire authentic, objective, reliable knowledge. This in turn means that the pursuit of knowledge must be shielded from the influence of all sorts of social factors, only considerations relevant for the determination of knowledge of truth being permitted to enter the intellectual domain, such as claims to knowledge, evidence, experiment, facts, logic, valid argument. If this is not done, knowledge will degenerate into mere propaganda and ideology, and academia will cease to be of value to humanity.

Almost paradoxically, values, policies, political programmes, articulations of human problems and what to do about them must all be excluded from the intellectual domain of inquiry so that it may be of genuine benefit to humanity, and help solve human problems.

At the core of knowledge-inquiry there is a philosophy of science that may be called *standard empiricism*. This asserts that, in science, evidence alone ultimately decides what theories are accepted and rejected. Simplicity, unity or explanatory power may influence choice of theory too, but not in such a way that the universe, or the phenomena, are assumed to be simple, unified or comprehensible. *No thesis about the world can be accepted as a part of scientific knowledge independent of evidence, let alone in violation of evidence*.

In deciding to what extent this whole conception of inquiry is rational, the notion of rationality that we require appeals to the idea that there is some no doubt rather ill-defined set of methods, rules or strategies such that, if put into practice, give us our best chances of solving our problems, realizing our aims. These rules of reason do not guarantee success, and do not prescribe precisely what we must do. They are meta-methods in that they presuppose that we can already implement a great variety of methods in order to act successfully in the world. The meta-methods of reason help us marshal what we can already do so as to solve new problems, realize hitherto unrealized aims.

Granted this relevant conception of rationality, four absolutely elementary rules of rational problem-solving are: (1) articulate, and try to improve the articulation of, the problem to be solved; (2) propose and critically assess possible solutions; (3) when the problem to be solved is intractable, break it down into a number of simpler, preliminary, specialized problems in an attempt to work gradually towards the solution to the basic problem to be solved; (4) ensure that specialized and basic problem-solving interact, so that each may influence the other.

No problem-solving or aim-pursuing enterprise can be rational which persistently violates one or other of these four rules.

Knowledge-inquiry is so severely irrational that it violates, in a structural way, *three* of these four most elementary rules of reason. It puts rule (3) into practice to splendid effect: hence the multiplicity of specialized disciplines of academia today. But rules (1), (2) and (4) are all violated.

Granted that the aim really is to help promote human welfare, then the problems academia fundamentally must help to solve are problems of *living*, not problems of *knowledge*. Even where new knowledge and technology are required, in medicine for example, it is always what this enables us to do (or refrain from doing) that enables us to achieve what is of value in life (except when knowledge is itself of value). Thus, putting the first two rules into academic practice would involve (1) articulating, and improving the articulation of our problems of living, and (2) proposing and critically assessing possible solutions – possible and actual *actions*, *policies*, *political programmes*, *philosophies of life*. Knowledge-inquiry excludes these fundamental activities from the intellectual domain of inquiry – or at least pushes them to the periphery, rather than putting them at the heart of the academic enterprise. Having suppressed, or marginalized, thinking about problems of living, knowledge-inquiry is not able to link up such thinking with specialized research – thus violating rule (4) as well.

This gross, structural irrationality of knowledge-inquiry is bound to have adverse humanitarian or social consequences. It means academia fails to do what it most needs to do, if it is to help humanity achieve what is of value, make progress towards a good world, namely: create, sustain and promote imaginative and critical thinking about what our problems of living are, and what we need to do about them – especially our global problems. It means specialized research fails to be influenced by, and fails to influence, our most enlightened thinking about what our problems of living are, and what we need to do about them. The aims and priorities of scientific research fail to respond to the most urgent needs of humanity. As I have already indicated, it is the successful pursuit of knowledge *irrationally dissociated from a more fundamental concern with tackling problems of living, with promoting wisdom*, which is responsible for the genesis of our

current global problems, and our current incapacity to resolve them.

Wisdom-inquiry emerges when knowledge-inquiry is modified structurally just sufficiently to ensure that all four rules of rational problem solving are put into practice. Social inquiry and the humanities acquire, as their basic tasks, (1) to articulate, and improve the articulation of, problems of living, and (2) to propose and critically assess possible solutions – and to promote these activities in the great world beyond academe. Social inquiry, so construed, is intellectually more fundamental than natural science.

So much for the first argument. I come now to the second one, which exploits an "aim-pursuing" notion of rationality.

It may be asked: If academia really is damagingly irrational in the way I have argued it is, how on earth did this situation arise? When did it arise?

It all goes back to the 18th century Enlightenment, especially the French Enlightenment. The *philosophes* – Voltaire, Diderot, Condorcet and company – had the profound idea that it may be possible to learn from scientific progress towards greater knowledge how to achieve social progress towards an enlightened world. They thought the way to do this is to develop the social sciences alongside natural science. This idea was developed throughout the 19th century, by Mill, Marx and others, and built into academia in the early 20th century with the creation of disciplines and departments of social science. The outcome is what, by and large, we have today: knowledge-inquiry. But this way of developing the Enlightenment programme contains a series of blunders.

In order to develop the profound Enlightenment idea correctly, the following three steps need to be got right:

(i) The progress-achieving methods of science need to be correctly identified.

(ii) These methods need to be correctly generalized so that they become fruitfully applicable to any human endeavour,

whatever the aims may be, and not just applicable to the endeavour of improving knowledge.

(iii) The correctly generalized progress-achieving methods then need to be exploited correctly in the great human endeavour of trying to make social progress towards an enlightened, wise, civilized world.

The *philosophes* got all three steps wrong, and it is this bungled version of the Enlightenment programme that we built into academia in the early 20th century, knowledge-inquiry as we have it today being the outcome.

To begin with, the *philosophes* took for granted rather crude inductivist versions of standard empiricism. All versions of standard empiricism are, however, untenable. Physics, quite properly, only accepts *unified* theories – theories that attribute the same laws to all the phenomena to which the theory applies – even though endlessly many empirically more successful disunified rival theories could always be concocted. This means physics makes a big, persistent, implicit, metaphysical assumption: the universe is such that all grossly disunified theories are false (and hence can be ignored, whatever their empirical success might be). Rigour demands that this big, influential, highly problematic and implicit assumption be made explicit within science so that it can be critically assessed, so that alternatives can be developed and assessed, in an attempt to develop an improved version of the assumption. Put another way, the basic, highly problematic *aim* of physics of discovering the precise nature of the underlying dynamic unity that runs through all physical phenomena needs to be made explicit within physics so that it can be critically explored and assessed in the hope that it can be improved.

The best way to do this is to represent the assumption – or aim – of physics in the form of a hierarchy, assumptions and associated methods becoming less and less substantial as one goes up the hierarchy, and so more and more likely to be true, and more nearly such that their truth is required for science, or the pursuit of knowledge, to be possible at all. In this way we create a framework of relatively secure assumptions and methods – aims and methods – high up in the hierarchy, within which much more

substantial and problematic assumptions and methods – aims and methods – can be critically assessed and, we may hope, improved. Those modified assumptions are accepted which do the best justice to assumptions higher up in the hierarchy, and at the same time support the most empirically progressive research programmes, or promise to do so.

We arrive at a new picture of the nature of physics, which I have called *aim-oriented empiricism*. According to this picture, there is something like positive feedback between improving knowledge, and improving aims and methods – improving knowledge-about-how-to-improve-knowledge. Science adapts its nature to what it finds out about the nature of the universe. This is the nub of scientific rationality, and the key to the astonishing progressive success of science.[10]

This picture of physics can be generalized to other branches of natural science,[11] and so as to include broader aims of science.[12]

For the aims of science do not just make problematic *metaphysical* assumptions. They make assumptions that are, if anything, even more problematic concerning *values*, and the humanitarian or social *use* of science. The scientific pursuit of *unified* or *explanatory* truth is a special case of the more general pursuit of truth that is, in one way or another, of *interest*, of *value*, or of *use*. And knowledge is sought so that it may be *used* by people so as to achieve what is of value in life.

But precisely because these broader aims are, if anything, even more problematic, they too need to be subjected to sustained critical scrutiny in an attempt to improve them, so that they come to reflect the best interests of humanity.

So much for the first blunder of the *philosophes* and what needs to be done to put it right. The *philosophes* failed to capture correctly the progress-achieving methods of science – a failure still prevalent in the way most scientists, philosophers and others think about science today.[13]

The second blunder concerns the failure of the *philosophes* to generalize the progress-achieving methods of science correctly, which follows on, of course, from the first failure. In order to put this right, it needs to be appreciated that it is not just in science that aims are problematic; this is the case in life too, for individuals, for institutions, for societies, for humanity. Aims can be problematic because, despite what may be thought, they are unrealizable, undesirable, or both. They can be undesirable because they conflict with other aims, or because attempts to realize them have all sorts of unforeseen undesirable consequences. Quite generally, then, and not just in science, whenever aims are problematic, we need to represent them in the form of a hierarchy, aims becoming less and less specific and problematic as we go up the hierarchy. In this way we create a framework of relatively unproblematic aims and associated methods, high up in the hierarchy, within which much more specific and problematic aims and methods, low down in the hierarchy, can be scrutinized and, we may hope, improved, as we act, as we live. This generalization of aim-oriented empiricism may be called *aim-oriented rationality*.

Third, and most disastrously of all, the *philosophes* failed completely to try to apply aim-oriented rationality to the immense, and profoundly problematic enterprise of making social progress towards an enlightened, wise world. The aim of such an enterprise is notoriously problematic. For all sorts of reasons, what constitutes a good world, an enlightened, wise or civilized world, attainable and genuinely desirable, must be inherently and permanently problematic.[14] Here, above all, it is essential to employ aim-oriented rationality, arrived at by generalizing the methods of science, and designed specifically to facilitate progress when basic aims are problematic. It is just this that the *philosophes* failed to do. Instead of applying aim-oriented rationality to *social life*, the *philosophes* sought to apply a seriously defective conception of scientific method to *social science*, to the task of making progress towards, not a *better world*, but to better *knowledge* of social phenomena. And this ancient blunder is still built into the institutional and intellectual structure of academia today, inherent in the current character of social science.[15]

Properly implemented, in short, the Enlightenment idea of learning from scientific progress how to achieve social progress towards an enlightened world would involve developing social inquiry, not as social *science*, but as social *methodology*, or social *philosophy*. A basic task would be to get into personal and social life, and into other institutions besides that of science – into government, industry, agriculture, commerce, the media, law, education, international relations – hierarchical, progress-achieving methods (designed to improve problematic aims) arrived at by generalizing the methods of science.

A basic task for academic inquiry as a whole would be to help humanity learn how to resolve its conflicts and problems of living in more just, cooperatively rational ways than at present. Academia would become a kind of people's civil service, doing openly for the public what actual civil services are supposed to do in secret for governments. Academia would have just sufficient power (but no more) to retain its independence from government, industry, the press, public opinion, and other centres of power and influence in the social world. It would seek to learn from, educate, and argue with the great social world beyond, but would not dictate. Academic thought would be pursued as a specialized, subordinate part of what is really important and fundamental: the thinking that goes on, individually, socially and institutionally, in the social world, guiding individual, social and institutional actions and life. The fundamental intellectual and humanitarian aim of inquiry would be to help humanity acquire wisdom – wisdom being the capacity to realize (apprehend and create) what is of value in life, for oneself and others, wisdom thus including knowledge and technological know-how but much else besides.

But would wisdom-inquiry really help us solve our immense global problems? In what follows I set out to show that it would.

What Do We Need to Do?

What do we need to do to solve our global problems? I now indicate very briefly what in my view needs to be done, taking the main problems in turn.

Global Warming. This would seem to be the most serious of our problems. Let me state the obvious. In order to come to grips with this problem, the industrially advanced world needs to cut back on its emissions of CO_2 as rapidly as possible. We must stop burning oil and coal, and rapidly develop alternative sources of power: wind, hydro-electric, wave, tidal, sunlight via photoelectric cells, biomass fuels and, perhaps, nuclear power. Vehicles powered by petrol must be replaced by vehicles powered by batteries (charged by electricity in turn produced by sustainable means that do not emit CO_2). Energy saving devices need to be installed in homes, offices, factories and other buildings. Street lighting needs to be made more energy efficient. At the same time, global cooperation is required to put an end to the destruction of tropical rain forests, which significantly contributes to global warming.

Many of these measures are highly problematic, for both technical and social reasons. Wind power, hydro-electric power, and tidal power all tend to have adverse environmental consequences. Growing biomass fuels takes land away from the production of crops for much needed food. Nuclear power is, of course, notoriously problematic, in part because of the long-lasting, highly radioactive material that it produces, in part because of the link with nuclear weapons. Electric vehicles at present have nothing like the range or power of petrol or diesel fuelled vehicles. It is not clear what is to replace oil when it comes to ships, and aeroplanes

It may prove possible to harvest sunlight on an industrial scale by means of photo-electric panels spread over square miles in deserts. But photo-electric panels are expensive, and there are problems of transporting electricity to cities and densely populated areas – which tend to be far away from deserts.

There are speculative ideas about how it might be possible to extract CO_2 from the atmosphere in sufficient quantities to make a difference, or to cut down on the amount of sunlight reaching the earth, for example by sending mirrors into space between us and the sun. All these ideas seem at present impractical, because of

expense or adverse consequences or, quite simply, because they would not work.

The world needs to cooperate on putting a stop to the destruction of tropical rain forests. Countries such as Brazil and Indonesia need financial and other assistance from the industrially advanced world. Tropical rain forests require international policing to stop destructive logging.

The planet will continue to grow warmer even if we stopped all emissions of CO_2 overnight. This is because there is a delay in the planetary system. The CO_2 we have already put into the atmosphere will continue to turn up the heat for some time to come. As it is, of course, it will at best take decades for the world to reduce substantially its emissions of CO_2. Global warming will continue for decades to come. Low lying islands and coastal regions will have to be abandoned, as sea levels rise, and other regions will have to be abandoned because of heat and drought. As populations rise, land available for habitation and agriculture will shrink, not a good prospect for peace. World-wide cooperation will be needed to take care of refugees who come from regions made uninhabitable by global warming.

War. The world needs an international peace-keeping force which can be deployed swiftly anywhere on earth to intervene if violent conflict seems likely, or has already broken out, whether internal to a country, or between nations. At present, the UN is supposed to perform this function, but does so ineffectually, partly because it cannot intervene in civil war, partly because the UN security council must reach agreement, and this is either not forthcoming at all, or only after a protracted period of wheeling and dealing. Sometimes the UN supports military intervention it ought not to support, as in the case of the Afghanistan war[16] after 9/11, while on other occasions it fails to support intervention it clearly ought to support, as in cases of conflict in Africa, in the former Yugoslavia, and in Rwanda.

In order to have an international peace-keeping force that does the job properly, we probably first need to establish a democratic, enlightened world government. That, it might be argued, rather

puts the cart before the horse. We will only be able to establish a democratic world government if we have already established world peace. It seems reasonable to hold, however, that efforts to establish world peace should work in tandem with efforts to establish democratic world government.

More than an effective, humanitarian peace-keeping force is required to establish world peace, as the case of Europe graphically illustrates. For centuries, Europe suffered war after war, culminating in the horrors of the first and second world wars, both of which had the source in Europe. After the second world war, a number politicians and others worked hard to develop trade and other interconnections between European states such that all future European wars would be unthinkable. This hope has been fully realized. Yugoslavia does not really constitute an exception since that country was never a part of the efforts to create the Common Market, or the European Union. We have here something like a model for what we should try to create world-wide. For this to succeed, though, it will probably be necessary for there to be democracies in all the counties of the world, and far greater equality of wealth than at present around the world. (This proposal is very definitely not the view that the rest of the world should become European in character and culture; it is rather the view that something important is to be learned from the manner in which European peace has been established after centuries of war, for the establishment of peace throughout the rest of the world. We have here a particular example of what can be accomplished.)

We require, too, a massive reduction in armaments and the military, all over the world, and especially in the USA and UK. All nuclear weapons need to be destroyed, and the arms industry needs to be massively curtailed.

Population Growth. The world's population is predicted to rise to over 9 billion by 2050. Population growth adds to global warming, increases likelihood of war, undermines economic growth, and tends to speed up destruction of natural habitats, extinction of species, and over fishing of the sea. One relatively cheap and practical measure that could be taken to slow down population growth would be to ensure that every woman on the

planet of child bearing age has access to reliable birth control methods: the pill, the condom, the coil. It does not help that this is opposed by the Catholic Church, and was opposed by the Bush administration in the USA. One view is that population growth tends to level off as countries become wealthier. Parents tend not to have so many children – the argument goes – because the need to provide them with an education makes children more expensive, parents do not need to have children to care for them in old age because they can rely on state care, and falling death rates among children mean that it is no longer seen as essential to have lots of children to ensure that some survive. It is foolish to rely on these mechanisms, however, to slow down population growth. What is required is an effective programme world wide to ensure that every woman of child bearing age has access to reliable contraception.

World Poverty. The debt of the poor countries of the world needs to be cancelled. There needs to be a change in world trading agreements, to ensure that it is the poor countries that are favoured, and not the rich. It must be permitted for poor countries to implement protectionism, to protect fledging industries against international competition.

A new global Marshall Plan needs to be created, funded by the wealthy countries of the world – the USA, Canada, Europe, Japan, Australia, New Zealand, and perhaps others – to help poor countries develop in as sustainable a way as possible, the emphasis being on education and the development of appropriate industry and agriculture. This needs to be allied to efforts to promote democracy, and to put a stop to political corruption. More scientific and technological research needs to be devoted to the problems of the poor: problems of health, agriculture, communications, education, appropriate industrial development.

Destruction of Natural Habitats and Extinction of Species. As an integral part of the global Marshall plan, indicated above, wealthy countries need to collaborate with poor and developing countries to take those measures required to stop the destruction of tropical rain forests and other natural habitats. This involves both deploying and adequately financing and equipping environmental

police to put a stop to logging and hunting. It also involves providing aid for alternative, more sustainable methods of development. Agriculture needs to be developed in such a way that habitats remain for wild life to flourish. There needs to be enhanced protection for endangered species.

I put these global policy proposals forward, not because I think they make a startlingly original contribution to thought about how we are to solve our global problems, but rather to indicate the kind of things we need to do to solve these problems. We need this as background to help answer the crucial question of the next section: "How would wisdom-inquiry help us put global policies such as these successfully into practice?"

I am well aware that some governments, many NGOs, the UN, social businesses, countless individual and officials are already working hard to implement many aspects of these policies. Despite all these efforts, progress towards implementing the policies I have indicated (or better versions of these policies) remains agonizingly slow. Some of our global problems are intensifying – most notably global warming.

Some may complain that not enough detail has been given to assess these policy proposals. I have, however, I think, said enough for the purposes of the argument of the next section. Others may complain that some, or even all, of what I have proposed is wrong-headed, and such that, if put into practice, would have dire consequences, the very opposite of what is intended. Those who believe in the universal efficacy of the free market to solve our problems are likely, in particular, to object to much of the above. My reply is that even if the above policies are misguided, in part or in total, this will not substantially affect the argument of the next section. It must be remembered that a basic task of wisdom-inquiry is (a) to articulate global problems, and (b) propose and critically assess possible solutions. Nothing is presupposed about what our problems are, and what we need to do about them: wisdom-inquiry is intended to help enlighten us about these matters. Furthermore, even if we do need different policies from the above to solve our problems, nevertheless the argument

of the next section goes through – as long as it is agreed that we need to tackle our problems *democratically*.

How Could Wisdom-Inquiry Help?

How exactly, it may be asked, could wisdom-inquiry help humanity implement these policies – if that is what is required – and thus help solve our global problems in a way which is so much more effective than knowledge-inquiry? Let us suppose that the academic revolution has occurred. Universities everywhere put wisdom-inquiry into practice. How could this make such a substantial difference to our capacity to solve global problems humanely and effectively, thus making progress towards as good a world as possible?

In essence, the answer is extremely simple. Our only hope of solving our global problems successfully lies with tackling these problems *democratically*. Benevolent, enlightened dictatorships or autocracies will not meet with success. But if democratic tackling of global problems is to succeed, we first need democracy to be established around the world, and second we need electorates – the world's population – to have an enlightened understanding of what our global problems are, and what we need to do about them. If this is lacking, democratic governments will not be able to implement the policies that are required. If, on the other hand, a majority of the world's people do have a good understanding of what our problems are, and what needs to be done about them, there is a good chance governments will respond to what this majority demands. This assumes, of course, that it is in the interests of the majority that global problems be solved. If this is not the case, then many might see clearly what needs to be done, but might nevertheless oppose the doing of it. I shall discuss this possibility in the next but one section.

A crucial requirement for tackling global problems successfully, then, is that a majority of the world's people have a good understanding of what these problems are, and what needs to be done about them. This is quite drastically lacking at present. Indeed, it may seem quite absurdly utopian to think it would ever

be possible for most people on earth to agree about what our problems are, and what we need to do about them.

Step forward wisdom-inquiry. It is just here that wisdom-inquiry makes a dramatic difference. A basic task of wisdom-inquiry is (a) to articulate problems of living, including global problems, and (b) to propose and critically assess possible solutions – actual and possible actions, policies, political programmes, economic strategies, philosophies of life.[17]

A university that puts wisdom-inquiry into practice would hold a big Seminar once a month (let us say) devoted to discussing what our global problems are, and how they are to be solved. Everyone at the university would be invited to attend and participate, from undergraduate to professor and vice-chancellor. The Seminar might sometimes be big affairs, involving the media, with well-known speakers, while on other occasions it might be smaller, more private, an affair for a group of specialists, devoted to some specific issue. The aim would be, not just to highlight existing problems, or criticize existing policies, but to come up with workable, realistic, effective new policies. The constitution of the university would be such that good ideas developed in the Seminar would be capable of influencing more specialized research in the university, and would be critically assessed by such research. One result of the Seminar would be that all those associated with, and educated in, universities, from professor to undergraduate, would acquire a good understanding of what our global problems are, what is and is not being done about them, what could be done, and what kind of research and education is required to help solve them. A long-term task of social inquiry would be to help build aim-oriented rationality into our diverse institutions – government, industry, finance, agriculture, international trade, the military, the media, the law, education – so that problematic aims may be transformed to become those that help solve global problems. A fundamental task for universities implementing wisdom-inquiry is to educate the public about what our global problems are, and what we need to do about them. This would be done, not by *instruction*, but by lively discussion and debate, ideas, arguments and information flowing in both directions. There would be powerful inducements for academics to engage in public education by

means of public discussion and lectures, articles in newspapers, popular books, broadcasts, blogs on the internet, even novels and plays. All academics want to make a contribution to academic thought, not only for its own sake, but also because this leads to academic status and prestige, academic prizes, and career advancement. Granted wisdom-inquiry, contributions are judged in terms of their capacity to help people realize what is of value in life.

Working within the framework of wisdom-inquiry, academics would, in other words, be highly motivated to engage in the kind of public education I have indicated (since this is integral to what counts as an academic contribution). A central purpose of academia would be to promote cooperatively rational tackling of problems of living in the social world, and put aim-oriented rationality into practice in personal and social life. The problematic aims and priorities of scientific and technological research would be subjected to sustained, imaginative exploration and criticism, by academics and non-academics alike, this feeding into, and making use of, the discussion of problems of living going on within and without academia. Wisdom-inquiry is designed to engage in rational discussion of political policies and programmes, and to promote this as well. Universities would have just sufficient power to retain their independence from pressures of government, public opinion, industry, and the media, but no more. It would be standard for a nation's universities to include a shadow government. If the actual government does not permit such a thing, universities would clamour to be free to create it and, in doing so, and would receive international support. The nation's university shadow government would be entirely without power, but would also be free of all the constraints and pressures that actual power is subject to, which tend to distort and corrupt what actual governments do. The shadow university government would seek to develop and publish ideal possible actions, policies and legislative programmes which the nation's actual government ought to be developing and enacting. The idea would be that learning would go on in both directions, the ideal university shadow government learning about the realities of power, the nation's actual government learning to distinguish what is merely politically expedient from what is in the interests of the nation and

humanity, a fund of good ideas for policies and legislation being readily available from the shadow government. Finally, the world's universities would contain a shadow university world government which would do, for the world, what national shadow governments do for nations. A basic task would be to work out how an actual world government might be created, what form this should take, what its desirable and undesirable consequences would be likely to be.

In brief, the whole character, structure, activity, aims and ideals of wisdom-inquiry universities would be such as to be devoted to helping humanity learn how to resolve global problems in increasingly cooperatively rational ways, thus making increasingly assured progress towards as good a world as possible. Universities would be humanity's means to learn how to create a genuinely civilized world.

The contrast with knowledge-inquiry is devastating. Knowledge-inquiry fails to do almost everything that needs to be done to help humanity make progress in tackling global problems. Knowledge-inquiry does, it is true, acquire knowledge and technological know-how, and make this available, primarily to government agencies and industry, to be used to solve practical problems. This can undeniably be of great value and, as we have seen, has made possible the creation of the modern world. But almost everything else that needs to be done is rigorously excluded from the intellectual domain of academia under the misguided idea that this is necessary to preserve the objectivity and reliability, the authentically factual character, of the knowledge that is acquired. Far from giving priority to (a) articulating global problems, and (b) proposing and critically assessing possible solutions, these vital intellectual activities are excluded from knowledge-inquiry altogether, on the grounds that they involve politics, values, action, human suffering, morality, and can only undermine, and not contribute to, the pursuit of factual knowledge. Again, far from giving priority to the task of introducing aim-oriented rationality into the social world, knowledge-inquiry does not even put aim-oriented rationality into practice *itself*, in science, social inquiry or the humanities. There is no place for the Seminar devoted to tackling global problems. Social science and the humanities seek

to improve knowledge and understanding of social and cultural phenomena, but do not actively try to transform social life. Individual academics may take it upon themselves to contribute to public education but this is, as it were, an extra-curriculum activity, not a part of the official business of professional academic life – which is to contribute to the growth of knowledge. Far from academia encouraging discussion and debate with the public, ideas being encouraged to flow in both directions, knowledge-inquiry, quite to the contrary, demands that the intellectual domain of inquiry be sealed off from the corrupting influence of the social world, so that only those considerations relevant to the acquisition of knowledge of truth may influence what is accepted and rejected: such as evidence and valid argument. Knowledge-inquiry provides every inducement to academics to seek to contribute to knowledge, but no inducement whatsoever to engage in the extra-curriculum activity of public education (since this does not contribute to knowledge). What matters is how well-established and significant a contribution to knowledge is, not whether it does, or does not, help enhance the quality of human life. The intellectual standards of knowledge-inquiry are almost exclusively concerned with the problem of distinguishing authentic contributions to knowledge from would-be contributions that fail to pass master, in one way or another. These standards are not concerned to help improve the aims and priorities of research. Choosing what research aims receive financial support, and what do not, is left to research funding bodies to decide: it is not thrown open to sustained scientific and public discussion and debate. Inevitably, as a result, research priorities come to reflect the interests of those who do science, and those who pay for it – government and industry – rather than the interests of those whose needs are the greatest, the poor of the earth who, being poor, do not have the means to pay for scientific research. Vast sums are spent on military research, very little in comparison on research related to the diseases and problems of the poor of Africa, south America and Asia. Finally, there can be no place for a shadow government in the university, granted knowledge-inquiry. Politics is to be excluded altogether from the intellectual domain of inquiry; only the pursuit of knowledge about political life is permitted.

The outcome of this wholesale failure to do what most needs to be done, apart from acquire knowledge, is just what might be expected. Much knowledge is acquired but this, in the absence of a more fundamental concern to help humanity solve global problems, does as much harm as good. Knowledge-inquiry, *instead of helping to solve global problems, helps to create and intensify them*, as we have seen.

I have concentrated on *universities*. But if the revolution were to occur in universities, it would have an impact throughout the whole educational and research world, as well as influencing dramatically, as I have tried to indicate, the media, government, the arts, the law, industry, agriculture, international relations, and personal and social life quite generally.

Changing knowledge-inquiry into wisdom-inquiry in universities throughout the civilized world would make a dramatic difference to the capacity of humanity to tackle global problems successfully.

Objections

Objection 1: Academics would never agree to put wisdom-inquiry into practice.

Reply: The arguments for the greater rationality, intellectual integrity and potential human value of wisdom-inquiry are overwhelming. Once these arguments have been understood by a sufficient number of influential academics, funding bodies and university administrators, universities will begin to move piecemeal towards wisdom-inquiry. Indeed, as I shall show in the next section, this academic transformation is, to some extent, already underway.

Objection 2: Governments, industry, public opinion would never permit the required academic revolution to take place.

Reply: Undoubtedly in some parts of the world today it would indeed be impossible. There would be difficulties in North Korea, Burma, Zimbabwe, Saudi Arabia, Iran, and even China and Russia. Even in the 30 full democracies of the world,[18] serious

attempts to instigate wisdom-inquiry would meet with opposition. Even democratically elected governments are unlikely to take kindly to academic criticism of their policies, and to the creation of academic shadow governments. Those universities that took a lead in implementing wisdom-inquiry might find they were being penalized by having government funding decreased. Industry might withdraw funds as well. Academia would have an incredibly powerful argument in its hands to combat such manoeuvres: the changes are needed in the interests of rationality, intellectual integrity, and the future of humanity. The public could be alerted to the scandal of government attempting to suppress academic thought devoted to helping humanity make progress towards as good a world as possible. This objection does not look very plausible when one takes into account that the academic revolution, from knowledge to wisdom, is already underway to some extent, in the UK and elsewhere, as we shall see in the next section.

Objection 3: Even if the academic revolution occurred, it would have little impact, either because academics failed to agree among themselves, or because they are ignored by centres of power and influence.

Reply: A nightmare possibility is that wisdom-inquiry academics simply reproduce all the standard ideas, prejudices and disagreements of the social world around them. In the US, academics supporting the Democrats might slug it out with those supporting the Republicans, and no one learns anything. I acknowledge that this is a possibility, but it would betray the fundamental intellectual ideals of wisdom-inquiry. Those engaged in social inquiry need to treat policy ideas in a way that is analogous, in important respects, to the way natural scientists treat scientific theories: some such ideas may be hopeless, others may be partly good, partly bad, none is likely to be entirely good and sound, the all-important point is to pick out the best idea from its rivals, and subject it and its rivals to sustained critical examination, taking experience into account where possible, and if a better idea emerges from the pool of rivals, that should be adopted instead. It is of course just this that aim-oriented rationality is designed to facilitate, in the field of ideas for solutions to problems of living,

on analogy with what aim-oriented empiricism facilitates within natural science. It will, for many reasons, be more difficult to protect wisdom-inquiry social thought from subversion than it is to protect natural science from subversion. Policy ideas implicate our lives, passions, ideals and values directly, and are much harder to assess rationally and by means of experience, than are scientific ideas. Experiments in the social world cannot be conducted freely in the way in which scientific experiments can.

As for academia being ignored even if it comes up with excellent, agreed ideas this, to some extent, is almost bound to occur. But only to some extent, and for a time. It took scientists decades to get governments, industry, the media and the public to take global warming seriously. The long-standing failure to get the message across has finally led scientists to make changes to the nature of science – nudging things towards wisdom-inquiry, as we shall see in the next section. But finally, at the time of writing (2009), the message has been delivered although there are few signs, as yet, that much is being done to reduce CO_2 emissions, in response to this message. In my view, the global warming message would have been communicated two or three decades earlier if wisdom-inquiry had been in place by 1945, let us say. The academic revolution we are considering would undoubtedly have a major impact, in the ways I have indicated, even if this impact would not be felt overnight, but would take a decade or so to filter through the intricacies of the social world.

Objection 4: Even if the academic revolution occurred, even if it came up with excellent policies and technologies, and even if these were appreciated and understood by governments and public alike, still this would not make much difference because the barrier to solving global problems is not lack of knowledge and understand, but the unwillingness of the wealthy to make the necessary sacrifices. Too many wealthy, powerful people do not want to do what needs to be done.

Reply: The policies I have indicated above would undoubtedly meet with resistance, were they ever to be seriously on the political agenda. In the USA, for example, business corporations are very good at protecting what they see as their interests by lobbying, by

funding sympathetic politicians and political parties, and by manipulating the media. Even here, however, wisdom-inquiry could be effective, in that the public needs to become more enlightened about what these strategies are, and what needs to be done to combat them. This assumes that it is primarily the business and financial world which would want to oppose the policies we require. It could be argued that a majority of people living in wealthy countries do not want to support measures required to deal with global warming, or world poverty, because of the sacrifices that would have to be made. This, I believe, overestimates the sacrifices that are required, and underestimates concern people have for the future of the world. If policies are widely understood to be necessary, and likely to be effective, in tackling global warming, for example, or world poverty, then a majority of people in wealthy countries would be willing, I believe, to endorse these policies, even if some sacrifice is required. Why should a global Marshall plan today meet with so much more resistance than the original Marshall plan encountered when first instigated after the second world war, when the USA was not as wealthy as it is today?

Is the Academic Revolution Underway?

So far I have drawn a stark contrast between knowledge-inquiry and wisdom-inquiry, and have suggested that knowledge-inquiry is at present dominant in universities all over the world. But is this really the case?

I have no doubt that it was the case 25 years ago. In 1983, for the first edition of my book *From Knowledge to Wisdom* I investigated six relevant aspects of academia to see which conception of inquiry prevailed, and found that knowledge-inquiry was overwhelmingly dominant.[19] However, more recently, in 2003, I repeated the survey for the second edition of the book, and found that some changes had taken place in the direction of wisdom-inquiry, although knowledge-inquiry still dominated.[20] Since 2003, there have been further developments that have nudged some universities in the direction of wisdom-inquiry.

It is possible that the academic revolution really is underway, and we are in the middle of a dramatic transition from knowledge-

inquiry to wisdom-inquiry. I now indicate some developments that have taken place in universities in the UK during the last twenty years which can, perhaps, be interpreted as constituting steps towards wisdom-inquiry.[21]

Perhaps the most significant steps towards wisdom-inquiry that have taken place during the last twenty years are the creation of departments, institutions and research centres concerned with social policy, with problems of environmental degradation, climate change, poverty, injustice and war, and with such matters as medical ethics and community health. For example, a number of departments and research centres concerned in one way or another with policy issues have been created at my own university of University College London during the last 20 years.

At Cambridge University, there is a more interesting development. One can see the first hints of the institutional structure of wisdom-inquiry being superimposed upon the existing structure of *knowledge-inquiry* (as inquiry organized around the pursuit of knowledge may be called). As I have indicated, wisdom-inquiry puts the intellectual tackling of problems of living at the heart of academic inquiry, this activity being conducted in such a way that it both influences, and is influenced by, more specialized research. Knowledge-inquiry, by contrast, organizes intellectual activity into the conventional departments of knowledge: physics, chemistry, biology, history and the rest, in turn subdivided, again and again, into ever more narrow, specialized research disciplines. But this knowledge-inquiry structure of ever more specialized research is hopelessly inappropriate when it comes to tackling our major problems of living. In order to tackle environmental problems, for example, in a rational and effective way, specialized research into a multitude of different fields, from geology, engineering and economics to climate science, biology, architecture and metallurgy, needs to be connected to, and coordinated with, the different aspects of environmental problems. The sheer urgency of environmental problems has, it seems, forced Cambridge University to create the beginnings of wisdom-inquiry organization to deal with the issue. The "Cambridge Environmental Initiative" (CEI), launched in December 2004, distinguishes seven fields associated with

environmental problems: conservation, climate change, energy, society, water waste built environment and industry, natural hazards, society, and technology, and under these headings, coordinates some 102 research groups working on specialized aspects of environmental issues in some 25 different (knowledge-inquiry) departments: see http://www.cei.group.cam.ac.uk/ . The CEI holds seminars, workshops and public lectures to put specialized research workers in diverse fields in touch with one another, and to inform the public. There is also a CEI newsletter.

A similar coordinating, interdisciplinary initiative exists at Oxford University. This is the School of Geography and the Environment, founded in 2005 under another name. This is made up of five research "clusters", two previously established research centres, the Environmental Change Institute (founded in 1991) and the Transport Studies Institute, and three inter-departmental research programmes, the African Environments Programme the Oxford Centre for Water Research, and the Oxford branch of the Tyndall Centre (see below). The School has links with other such research centres, for example the UK Climate Impact Programme and the UK Energy Research Centre.

At Oxford University there is also the James Martin 21st Century School, founded in 2005 to "formulate new concepts, policies and technologies that will make the future a better place to be". It is made up of fifteen Institutes devoted to research that ranges from ageing, armed conflict, cancer therapy and carbon reduction to nanoscience, oceans, science innovation and society, the future of the mind, and the future of humanity. At Oxford there is also the Smith School of Enterprise and the Environment, founded in 2008 to help government and industry tackle the challenges of the 21st century, especially those associated with climate change.

Somewhat similar developments have taken place recently at my own university, University College London. Not only are there 141 research institutes and centres at UCL, some only recently founded, many interdisciplinary in character, devoted to such themes as ageing, cancer, cities, culture, public policy, the environment, global health, governance, migration, neuroscience,

and security. In addition, very recently, the attempt has been made to organize research at UCL around a few broad themes that include: global health, sustainable cities, intercultural interactions, and human wellbeing. This is being done so that UCL may all the better contribute to solving the immense global problems that confront humanity.[22]

All these developments, surely echoed in many universities all over the world, can be regarded as first steps towards implementing wisdom-inquiry.

Equally impressive is the John Tyndall Centre for Climate Change Research, founded by 28 scientists from 10 different universities or institutions in 2000. It is based in six British universities, has links with six others, and is funded by three research councils, NERC, EPSRC and ESRC (environment, engineering and social economic research). It "brings together scientists, economists, engineers and social scientists, who together are working to develop sustainable responses to climate change through trans-disciplinary research and dialogue on both a national and international level – not just within the research community, but also with business leaders, policy advisors, the media and the public in general" (http://www.tyndall.ac.uk/general /about.shtml). All this is strikingly in accordance with basic features of wisdom-inquiry.[23] We have here, perhaps, the real beginnings of wisdom-inquiry being put into academic practice.

A similar organization, modelled on the Tyndall Centre, is the UK Energy Research Centre (UKERC), launched in 2004, and also funded by the three research councils, NERC, EPSRC and ESRC. Its mission is to be a "centre of research, and source of authoritative information and leadership, on sustainable energy systems" (http://www.ukerc.ac.uk/). It coordinates research in some twelve British universities or research institutions. UKERC has created the National Energy Research Network (NERN), which seeks to link up the entire energy community, including people from academia, government, NGOs and business.

Another possible indication of a modest step towards wisdom-inquiry is the growth of peace studies and conflict resolution

research. In Britain, the Peace Studies Department at Bradford University has "quadrupled in size" since 1984 (Professor Paul Rogers, personal communication), and is now the largest university department in this field in the world. INCORE, an International Conflict Research project, was established in 1993 at the University of Ulster, in Northern Ireland, in conjunction with the United Nations University. It develops conflict resolution strategies, and aims to influence policymakers and others involved in conflict resolution. Like the newly created environmental institutions just considered, it is highly interdisciplinary in character, in that it coordinates work done in history, policy studies, politics, international affairs, sociology, geography, architecture, communications, and social work as well as in peace and conflict studies. The Oxford Research Group, established in 1982, is an independent think tank which "seeks to develop effective methods whereby people can bring about positive change on issues of national and international security by non-violent means" (www.oxfordresearchgroup.org.uk/). It has links with a number of universities in Britain. Peace studies have also grown during the period we are considering at Sussex University, Kings College London, Leeds University, Coventry University and London Metropolitan University. Centres in the field in Britain created since 1984 include: the Centre for Peace and Reconciliation Studies at Warwick University founded in 1999, the Desmond Tutu Centre for War and Peace, established in 2004 at Liverpool Hope University; the Praxis Centre at Leeds Metropolitan University, launched in 2004; the Crime and Conflict Centre at Middlesex University; and the International Boundaries Research Unit, founded in 1989 at Durham University.[24]

Additional indications of a general movement towards aspects of wisdom-inquiry are the following. Demos, a British independent think tank has, in recent years, convened conferences on the need for more public participation in discussion about aims and priorities of scientific research, and greater openness of science to the public.[25] This has been taken up by The Royal Society which, in 2004, published a report on potential benefits and hazards of nanotechnology produced by a group consisting of both scientists and non-scientists. The Royal Society has also created a "Science in Society Programme" in 2000, with the aims

of promoting "dialogue with society", of involving "society positively in influencing and sharing responsibility for policy on scientific matters", and of embracing "a culture of openness in decision-making" which takes into account "the values and attitudes of the public". A similar initiative is the "science in society" research programme funded by the Economic and Social Research Council which has, in the Autumn of 2007, come up with six booklets reporting on various aspects of the relationship between science and society. Many scientists now appreciate that non-scientists ought to contribute to discussion concerning science policy. There is a growing awareness among scientists and others of the role that values play in science policy, and the importance of subjecting medical and other scientific research to ethical assessment. That universities are becoming increasingly concerned about these issues is indicated by the creation, in recent years, of many departments of "science, technology and society", in the UK, the USA and elsewhere, the intention being that these departments will concern themselves with interactions between science and society.

Even though academia is not organized in such a way as to give intellectual priority to helping humanity tackle its current global problems, academics do nevertheless publish books that tackle these issues, for experts and non-experts alike. For example, in recent years many books have been published on global warming and what to do about it: see: http://www.kings.cam.ac.uk/assets/d/da/Global_Warming_bibliography.pdf

Here are a few further scattered hints that the revolution, from knowledge to wisdom, may be underway – as yet unrecognized and unorganized. In recent years, research in psychology into the nature of wisdom has flourished, in the USA, Canada, Germany and elsewhere.[26] Emerging out of this, and associated in part with Robert Sternberg, there is, in the USA, a "teaching for wisdom" initiative, the idea being that, whatever else is taught – science, history or mathematics – the teaching should be conducted in such a way that wisdom is also acquired.[27] There is the Arete Initiative at Chicago University which has "launched a $2 million research programme on the nature and benefits of wisdom": see

http://wisdomresearch.org/. There are two initiatives that I have been involved with personally. The first is a new international group of over 200 scholars and educationalists called Friends of Wisdom, "an association of people sympathetic to the idea that academic inquiry should help humanity acquire more wisdom by rational means": see www.knowledgetowisdom.org. The second is a special issue of the journal *London Review of Education*; of which I was guest editor, devoted to the theme "wisdom in the university". This duly appeared in June 2007 (vol. 5, no.2). It contains seven articles on various aspects of the basic theme. Rather strikingly, another academic journal brought out a special issue on a similar theme in the same month. The April-June 2007 issue of *Social Epistemology* is devoted to the theme "wisdom in management" (vol. 21, no. 2). On the 5th December 2007, History and Policy was launched, a new initiative that seeks to bring together historians, politicians and the media, and "works for better public policy through an understanding of history": see www.historyandpolicy.org/.

Out of curiosity, on 18 May 2009, I consulted Google to see whether it gives any indications of the revolution that may be underway. Here are the number of web pages that came up for various relevant topics: "Environmental Studies" 9,910,000; "Development Studies" 7,210,000; "Peace Studies" 529,000; "Policy Studies" 2,160,000; "Science, Technology and Society" 297,000; "Wisdom Studies" 5,510; "From Knowledge to Wisdom" 18,100; "Wisdom-Inquiry" 625. These figures do not, perhaps, in themselves tell us very much. There is probably a great deal of repetition – and Google gives us no idea of the intellectual quality of the departments or studies that are being referred to. One of the items that comes up in Google is Copthorne Macdonald's "Wisdom Page" – a compilation of "various on-line texts concerning wisdom, references to books about wisdom, information about organizations that promote wisdom", and including a bibliography of more than 800 works on wisdom prepared by Richard Trowbridge.

None of these developments quite amounts to advocating or implementing wisdom-inquiry (apart from the two I am associated with). One has to remember that "wisdom studies" is not the same

thing as "wisdom-inquiry". The new environmental research organizations, and the new emphasis on policy studies of various kinds, do not in themselves add up to wisdom-inquiry. In order to put wisdom-inquiry fully into academic practice, it would be essential for social inquiry and the humanities to give far greater emphasis to the task of helping humanity learn how to tackle its immense global problems in more cooperatively rational ways than at present. The imaginative and critical exploration of problems of living would need to proceed at the heart of academia, in such a way that it influences science policy, and is in turn influenced by the results of scientific and technological research. Academia would need to give much more emphasis to the task of public education by means of discussion and debate. As I have stressed, our only hope of tackling global problems of climate change, poverty, war and terrorism humanely and effectively is to tackle them democratically. But democratic governments are not likely to be all that much more enlightened than their electorates. This in turn means that electorates of democracies must have a good understanding of what our global problems are, and what needs to be done about them. Without that there is little hope of humanity making progress towards a better world. A vital task for universities is to help educate the public about what we need to do to avoid – at the least – the worst of future possible disasters. Wisdom-inquiry would undertake such a task of public education to an extent that is far beyond anything attempted or imagined by academics today. There is still a long way to go before we have what we so urgently need, a kind of academic inquiry rationally devoted to helping humanity learn how to create a better world.

Nevertheless, the developments I have indicated can be regarded as signs that there is a growing awareness of the need for our universities to change so as to help individuals learn how to realize what is genuinely of value in life – and help humanity learn how to tackle its immense global problems in wiser, more cooperatively rational ways than we seem to be doing at present. My own calls for this intellectual and institutional revolution may have been in vain. But what I have been calling for, all these years, is perhaps, at last, beginning to happen. If so, it is happening with agonizing slowness, in a dreadfully muddled and piecemeal way. It urgently needs academics and non-academics to

wake up to what is going on – or what needs to go on – to help give direction, coherence and a rationale to this nascent revolution from knowledge to wisdom.

Conclusion

The basic point is extremely simple. If we are to make better progress towards as good a world as possible, we need to learn how to do it. That in turn requires that we have in our hands institutions of learning rationally devoted to that task. It is just this that we do not have at present – although there are hints that such institutions might be struggling to be born. What we have at present is academic inquiry devoted to the pursuit of knowledge which, as we have seen, helps create as many problems as it solves. We urgently need to transform our universities so that they come to put wisdom-inquiry into practice. Only then will the God-of-Cosmic-Value, as it is represented on earth, flourish, embedded as it is within the God-of-Cosmic-Power.

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Notes

1. This chapter is a modified version of chapter nine of Maxwell (2010), available online with many of my articles at: http://discovery.ucl.ac.uk/view/people/ANMAX22.date.html.

2. For a more detailed exposition of this argument see Maxwell (2010), ch. 1.

3. This argument has been developed in a series of works: see Maxwell (1974; 1998; 2004, ch. 1 and appendix; 2005; 2006; 2010, ch. 5; 2011a). The most detailed and best expositions of the

argument are to be found in Maxwell (2007a, ch. 14) and Maxwell (2013).

4. See Maxwell (1966; 1968a; 1968b; 1984 or 2007a, ch. 10; 1999; 2000a; 2009a; 2011b; 2012a), and especially Maxwell (2001 and 2010).

5. See www.unicef.org/media/media_45485.html.

6. Weart (2003).

7. Science plus communism would have done the trick just as well – even better, in fact, as the record of the Soviet Union reveals (in connection with environmental degradation, for example).

8. Or, put it using the terminology with which we began, the fault lies with our long-standing failure to take, as our fundamental problem, to help the God-of-Cosmic-Value to flourish in the God-of-Cosmic-Power. This is our fundamental problem of living, and also our fundamental *intellectual* problem. If this were understood, it would be obvious that wisdom-inquiry is what we require to help us improve our attempts at solving this fundamental problem. It is our failure to appreciate that this *is* our fundamental problem which has made it possible to dissociate science from religion, from concern with what is of value in existence, and in turn made it possible to develop social inquiry as social *science* (the pursuit of knowledge of social phenomena), and not as the endeavour to help humanity realize what is of value in life.

9. For a detailed presentation of this argument see Maxwell (1984, or 2007a); see also Maxwell (2004). For summaries of the argument see Maxwell (1980; 1992; 2000; 2007b; 2008; 2010, chs. 5 and 6. For accounts of the development of the argument see Maxwell (2009a; 2012a).

10. One of the assumptions in the hierarchy of aim-oriented empiricism is the thesis that the universe is physically comprehensible – the thesis, that is, that the God-of-Cosmic-Power exists. For works expounding and defending aim-oriented empiricism see note 3.

11. See Maxwell (2004, pp. 39-51).

12. See Maxwell (2004, pp. 51-67).

13. See especially Maxwell (1984 or 2007a, ch. 5; 2004, ch. 2).

14. There are a number of ways of highlighting the inherently problematic character of the aim of creating civilization. People have very different ideas as to what does constitute civilization. Most views about what constitutes Utopia, an ideally civilized society, have been unrealizable *and* profoundly undesirable. People's interests, values and ideals clash. Even values that, one may hold, ought to be a part of civilization may clash. Thus freedom and equality, even though inter-related, may nevertheless clash. It would be an odd notion of individual freedom which held that freedom was for some, and not for others; and yet if equality is pursued too singlemindedly this will undermine individual freedom, and will even undermine equality, in that a privileged class will be required to enforce equality on the rest, as in the old Soviet Union. A basic aim of legislation for civilization, we may well hold, ought to be increase freedom by restricting it: this brings out the inherently problematic, paradoxical character of the aim of achieving civilization. One thinker who has stressed the inherently problematic, contradictory character of the idea of civilization is Isaiah Berlin; see, for example, Berlin (1980, pp. 74-79). Berlin thought the problem could not be solved; I, on the contrary, hold that the hierarchical methodology indicated here provides us with the means to learn how to improve our solution to it in real life.

15. See Maxwell (1984, or 2007a, chs. 3, 6 and 7). See also Maxwell (2000b).

16. 9/11 was a monstrous crime, not an act of war, and could not conceivably justify war in retaliation. The UN issued a resolution which in effect supported the USA in its subsequent invasion of Afghanistan. It did so, in my view, because the aggrieved nation was the USA. If, instead, France had been the victim, the Louvre being destroyed in an analogous terrorist attack with, we may suppose, a similar loss of life (around 3,000 people), I feel sure the

UN would not have supported France in a retaliatory invasion of Afghanistan.

17. Even if the policies I have outlined are the best available, they need to be developed in far greater detail before they qualify even for serious consideration. The chances are, of course, that what I have proposed deserves to be rejected, because it is unworkable, undesirable, or both.

18. *The Economist* has recently assessed the democratic character of the countries of the world: see http://en.wikipedia.org/wiki/Democracy_Index. There are 51 dictatorships, with North Korea at the bottom of the list.

19. See my (1984), ch. 6.

20. See my (2007a), ch. 6.

21. What follows is adapted from my (2009b).

22. For more information about attempts at University College London to put wisdom-inquiry into practice see my (2012b). From the website of University College London, a policy document can be downloaded entitled "The Wisdom Agenda": see http://www.ucl.ac.uk/research/wisdom-agenda. Here, my work has had some impact.

23. See Tyndall Centre (2006).

24. For an account of the birth and growth of peace studies in universities see Rogers (2006).

25. See Wilsdon and Willis (2004).

26. See, for example, Sternberg (1990).

27. See Sternberg et al., (2007).