

Can The World Learn Wisdom?

(Solidarity, Sustainability, and Non-Violence, vol. 3, no. 4, April 2007)

<http://www.pelicanweb.org/solisustv03n04maxwell.html>

Nicholas Maxwell

(Emeritus Reader In philosophy of science at University College London)

<https://www.ucl.ac.uk/from-knowledge-to-wisdom>

The crisis of our times is that we have science without wisdom. This is the crisis behind all the others. Population growth, the terrifyingly lethal character of modern war and terrorism, immense differences of wealth across the globe, annihilation of indigenous people, cultures and languages, impending depletion of natural resources, destruction of tropical rain forests and other natural habitats, rapid mass extinction of species, pollution of sea, earth and air, thinning of the ozone layer, above all global warming - even the aids epidemic: all these relatively recent crises have been made possible by modern science and technology. Indeed, in a perfectly reasonable sense of "cause", they 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, 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, 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. 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 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, nuclear.

All this is to be expected. Successful science produces knowledge, which facilitates the development of technology, both of which enormously increase our power to act. It is to be expected that this power will often be used beneficially (as it has been used), to cure disease, feed people, and in general enhance the quality of human life. But it is also to be expected, in the absence of wisdom, that such an abrupt, massive increase in power will be used to cause harm, whether unintentionally, as in the case (initially at least) of environmental damage, or intentionally, as in war and terror.

Before the advent of modern science, lack of wisdom did not matter too much; we lacked the means to do too much damage to ourselves and the planet. But now, in possession of unprecedented powers bequeathed to us by science, lack of wisdom has become a menace. The crucial question becomes: How can we learn to become wiser?

The answer is staring us in the face. And yet it is one that almost everyone overlooks. Modern science has met with astonishing success in improving our knowledge of the natural world. It is this very success that is the cause of our current problems. But instead of merely blaming science for our troubles, as some are inclined to do, we need, rather, to try to learn from the success of science. We need to learn from the manner in which science makes progress towards greater knowledge how we can make social progress towards greater wisdom.

This is not a new idea. It goes back to the Enlightenment of the 18th century, especially the French Enlightenment. Voltaire, Diderot, Condorcet and the other *philosophes* of the Enlightenment had the profoundly important idea that it might be possible to learn from scientific progress how to achieve social progress towards an enlightened world. They did not just have the idea: they did everything they could to put the idea into practice in their lives. They fought dictatorial power, superstition, and injustice with weapons no more lethal than those of argument and wit. They gave their support to the virtues of tolerance, openness to doubt, readiness to learn from criticism and from experience. Courageously and energetically they laboured to promote reason and enlightenment in personal and social life. And in doing so they created, in a sense, the modern world, with all its glories and disasters.

The *philosophes* of the Enlightenment had their hearts in the right place. But in developing the basic Enlightenment idea intellectually the *philosophes*, unfortunately, blundered. They botched the job. And it is this that we are suffering from today. The *philosophers* thought that the proper way to implement the Enlightenment Programme of learning from scientific progress how to achieve social progress towards an enlightened world is to develop the social sciences alongside the natural sciences. If it is important to acquire knowledge of natural phenomena to better the lot of mankind, as Francis Bacon had insisted, then (so, in effect, the *philosophes* thought) it must be even more important to acquire knowledge of social phenomena. First, knowledge must be acquired; then it can be applied to help solve social problems. They thus set about creating and developing the social sciences: economics, psychology, anthropology, history, sociology, political science.

This traditional version of the Enlightenment Programme, despite being damagingly

defective, was immensely influential. It was developed throughout the 19th century, by men such as Saint-Simon, Comte, Marx, Mill and many others, and was built into the intellectual-institutional structure of academic inquiry in the first part of the 20th century with the creation of departments of the social sciences in universities all over the world.

Academic inquiry today, devoted primarily to the pursuit of knowledge and technological know-how, is the outcome of two past revolutions: the scientific revolution of the 16th and 17th centuries which led to the development of modern natural science, and the later profoundly important but very seriously defective Enlightenment revolution. It is this situation which calls for the urgent need to bring about a *third* revolution to put right the structural defects we have inherited from the Enlightenment.

But what, it may be asked, is wrong with the traditional Enlightenment Programme? Almost everything. In order to implement properly the basic Enlightenment idea of learning from scientific progress how to achieve social progress towards a civilized world, it is essential to get the following three things right.

1. The progress-achieving methods of science need to be correctly identified.
2. These methods need to be correctly generalized so that they become fruitfully applicable to any worthwhile, problematic human endeavour, whatever the aims may be, and not just applicable to the one endeavour of acquiring knowledge.
3. 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 world.

Unfortunately, the *philosophes* of the Enlightenment got all three points wrong. And as a result these blunders, undetected and uncorrected, are built into the intellectual-institutional structure of academia as it exists today.

First, the *philosophes* failed to capture correctly the progress-achieving methods of natural science. From D'Alembert in the 18th century to Popper in the 20th, the widely held view, amongst both scientists and philosophers, has been (and continues to be) that science proceeds by assessing theories impartially in the light of evidence, *no permanent assumption being accepted by science about the universe independently of evidence*. But this standard empiricist view is untenable. If taken literally, it would instantly bring science to a standstill. For, given any accepted scientific theory, T, Newtonian theory say, or quantum theory, endlessly many rivals can be concocted which agree with T about observed phenomena but disagree arbitrarily about some unobserved phenomena. Science would be drowned in an ocean of such empirically successful rival theories if empirical considerations *alone* determined which theories are accepted, which rejected.

In practice, these rivals are excluded because they are disastrously disunified. *Two* considerations govern acceptance of theories in science: empirical success and unity. But in persistently accepting unified theories, to the extent of rejecting disunified rivals that are just as, or even more, empirically successful, science makes a big persistent assumption about the universe. Science assumes that the universe is such that all disunified theories are false. The universe has some kind of unified dynamic structure. It is physically comprehensible in the sense that explanations for phenomena exist to be

discovered.

But this untestable (and thus metaphysical) assumption that the universe is comprehensible is profoundly problematic. How can we possibly *know* that the universe is comprehensible? Science is obliged to assume, but does not know, that the universe is comprehensible. Much less does it know that the universe is comprehensible in this or that way. A glance at the history of physics reveals that ideas about how the universe may be comprehensible have changed dramatically over time. In the 17th century there was the idea that the universe consists of corpuscles, minute billiard balls, which interact only by contact. This gave way to the idea that the universe consists of point-particles surrounded by rigid, spherically symmetrical fields of force, which in turn gave way to the idea that there is one unified self-interacting field, varying smoothly throughout space and time. Nowadays we have the idea that everything is made up of minute quantum strings embedded in ten or eleven dimensions of space-time. Some kind of assumption along these lines must be made but, given the historical record, and given that any such assumption concerns the ultimate nature of the universe, that of which we are most ignorant, it is only reasonable to conclude that it is almost bound to be false.

The way to overcome this fundamental dilemma, inherent in the scientific enterprise, is to construe science as making a hierarchy of metaphysical assumptions concerning the comprehensibility and knowability of the universe, these assumptions asserting less and less as one goes up the hierarchy, and thus becoming more and more likely to be true. In this way a framework of relatively insubstantial, unproblematic, fixed assumptions and associated methods is created within which much more substantial and problematic assumptions and associated methods can be changed, and indeed improved, as scientific knowledge improves. Put another way, a framework of relatively unspecific, unproblematic, fixed *aims* and methods is created within which much more specific and problematic aims and methods evolve as scientific knowledge evolves. (A basic aim of science is to discover in what precise way the universe is comprehensible, this aim evolving as assumptions about comprehensibility evolve.) There is positive feedback between improving knowledge, and improving aims-and-methods, improving knowledge-about-how-to-improve-knowledge. This is the nub of scientific rationality, the methodological key to the unprecedented success of science. Science adapts its nature to what it discovers about the nature of the universe. For a detailed exposition and defence of this hierarchical, aim-oriented empiricist conception of science see my *The Comprehensibility of the Universe* (Oxford University Press, 1998, paperback 2003); see also my *The Human World in the Physical Universe* (Rowman and Littlefield, 2001) chapter 3 and appendix 3, and *Is Science Neurotic?* (Imperial College Press, December 2004), chapters 1 and 2.

So much for the first blunder of the Enlightenment.

Second, having failed to identify the methods of science correctly, the *philosophes* naturally failed to generalize these methods properly. They failed to appreciate that the idea of representing the problematic aims (and associated methods) of science in the form of a hierarchy can be generalized and applied fruitfully to other worthwhile enterprises besides science. Many other enterprises have problematic aims; these would benefit from employing a hierarchical methodology, generalized from that of science,

thus making it possible to improve aims and methods as the enterprise proceeds. There is the hope that, in this way, some of the astonishing success of science might be exported into other worthwhile human endeavours, with aims quite different from those of science.

Third, and most disastrously of all, the *philosophes* failed completely to try to apply such generalized progress-achieving methods 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. Here, above all, it is essential to employ the generalized version of the hierarchical, progress-achieving methods of science, designed specifically to facilitate progress when basic aims are problematic.

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 as social *methodology*, or social *philosophy*, not primarily as social *science*. 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. This task would be intellectually more fundamental than the scientific task of acquiring knowledge. Social inquiry would be intellectually more fundamental than physics. Academia would be 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.

One important consequence flows from the point that the basic aim of inquiry would be to help us discover what is of value, namely that our feelings and desires would have a vital rational role to play within the intellectual domain of inquiry. If we are to discover for ourselves what is of value, then we must attend to our feelings and desires.

But not everything that feels good is good, and not everything that we desire is desirable. Rationality requires that feelings and desires take fact, knowledge and logic into account, just as it requires that priorities for scientific research take feelings and desires into account. In insisting on this kind of interplay between feelings and desires

on the one hand, knowledge and understanding on the other, the conception of inquiry that we are considering resolves the conflict between Rationalism and Romanticism, and helps us to acquire what we need if we are to contribute to building civilization: mindful hearts and heartfelt minds.

Another outcome of getting into social and institutional life the kind of aim-evolving, hierarchical methodology indicated above, generalized from science, is that it becomes possible for us to develop and assess rival philosophies of life as a part of social life, somewhat as theories are developed and assessed within science. Such a hierarchical methodology

“provides a framework within which diverse philosophies of value – diverse religions, political and moral views – may be cooperatively assessed and tested against the experience of personal and social life. There is the possibility of cooperatively and progressively improving such *philosophies of life* (views about what is of value in life and how it is to be achieved) much as *theories* are cooperatively and progressively improved in science. In science diverse universal theories are critically assessed with respect to each other, and with respect to *experience* (observational and experimental results). In a somewhat analogous way, diverse philosophies of life may be critically assessed with respect to each other, and with respect to *experience* – what we do, achieve, fail to achieve, enjoy and suffer – the aim being so to improve philosophies of life (and more specific philosophies of more specific enterprises within life such as government, education or art) that they offer greater help with the realization of value in life” (See my *From Knowledge to Wisdom*, Blackwell, 1984, p. 254).

All in all, if the Enlightenment revolution had been carried through properly, the three steps indicated above being correctly implemented, the outcome would have been a kind of academic inquiry very different from what we have at present. We would possess what we so urgently need, and at present so dangerously and destructively lack, institutions of learning well-designed from the standpoint of helping us create a better, a wiser world.

Here, to conclude, is a summary of the changes that need to be made to science, and to academic inquiry more generally, to put right the blunders we have inherited from the Enlightenment, thus creating a kind of inquiry rationally designed to help humanity realize what is genuinely of value, actually and potentially, in existence.

1. There needs to be a change in the basic intellectual *aim* of inquiry, from the growth of knowledge to the growth of wisdom — wisdom being taken to be the capacity to realize what is of value in life, for oneself and others, and thus including knowledge, understanding and technological know-how.
2. There needs to be a change in the nature of academic *problems*, so that problems of living are included, as well as problems of knowledge. Furthermore, problems of living need to be treated as intellectually more fundamental than problems of knowledge.
3. There needs to be a change in the nature of academic *ideas*, so that proposals for action are included as well as claims to knowledge. Furthermore, proposals for action need to be treated as intellectually more fundamental than claims to knowledge.

4. There needs to be a change in what constitutes intellectual *progress*, so that progress-in-ideas-relevant-to-achieving-a-more-civilized-world is included as well as progress in knowledge, the former being indeed intellectually fundamental.
5. There needs to be a change in the idea as to where inquiry, at its most fundamental, is located. It is not esoteric theoretical physics, but rather the thinking we engage in as we seek to achieve what is of value in life.
6. There needs to be a dramatic change in the nature of social inquiry (reflecting points 1 to 5). Economics, politics, sociology, and so on, are not, fundamentally, *sciences*, and do not, fundamentally, have the task of improving knowledge about social phenomena. Instead, their task is threefold. First, it is to articulate problems of living, and propose and critically assess possible solutions, possible actions or policies, from the standpoint of their capacity, if implemented, to promote wiser ways of living. Second, it is to promote such cooperatively rational tackling of problems of living throughout the social world. And third, at a more basic and long-term level, it is to help build the hierarchical structure of aims and methods of aim-oriented rationality into personal, institutional and global life, thus creating frameworks within which progressive improvement of personal and social life aims-and-methods becomes possible. These three tasks are undertaken in order to promote cooperative tackling of problems of living — but also in order to enhance empathic or “personalistic” understanding between people as something of value in its own right. Acquiring knowledge of social phenomena is a subordinate activity, engaged in to facilitate the above three fundamental pursuits.
7. Natural science needs to change, so that it includes at least three levels of discussion: evidence, theory, and research aims. Discussion of aims needs to bring together scientific, metaphysical and evaluative consideration in an attempt to discover the most desirable and realizable research aims.
8. There needs to be a dramatic change in the relationship between social inquiry and natural science, so that social inquiry becomes intellectually more fundamental from the standpoint of tackling problems of living, promoting wisdom.
9. The way in which academic inquiry as a whole is related to the rest of the human world needs to change dramatically. Instead of being intellectually dissociated from the rest of society, academic inquiry needs to be communicating with, learning from, teaching and arguing with the rest of society — in such a way as to promote cooperative rationality and social wisdom. Academia needs to have just sufficient power to retain its independence from the pressures of government, industry, the military, and public opinion, but no more. Academia becomes a kind of civil service for the public, doing openly and independently what actual civil services are supposed to do in secret for governments.
10. There needs to be a change in the role that political and religious ideas, works of art, expressions of feelings, desires and values have within rational inquiry. Instead of being excluded, they need to be explicitly included and critically assessed, as possible indications and revelations of what is of value, and as unmasking of fraudulent values in satire and parody, vital ingredients of wisdom.
11. There need to be changes in education so that, for example, seminars devoted to the cooperative, imaginative and critical discussion of problems of living are at the

heart of all education from five-year-olds onwards. Politics, which cannot be taught by knowledge-inquiry, becomes central to wisdom-inquiry, political creeds and actions being subjected to imaginative and critical scrutiny.

12. There need to be changes in the aims, priorities and character of pure science and scholarship, so that it is the curiosity, the seeing and searching, the knowing and understanding of individual persons that ultimately matters, the more impersonal, esoteric, purely intellectual aspects of science and scholarship being means to this end. Social inquiry needs to give intellectual priority to helping empathic understanding between people to flourish (as indicated in 6 above).
13. There need to be changes in the way mathematics is understood, pursued and taught. Mathematics is not a branch of knowledge at all. Rather, it is concerned to explore problematic *possibilities*, and to develop, systematize and unify problem-solving methods.
14. Literature needs to be put close to the heart of rational inquiry, in that it explores imaginatively our most profound problems of living and aids personalistic understanding in life by enhancing our ability to enter imaginatively into the problems and lives of others.
15. Philosophy needs to change so that it ceases to be just another specialized discipline and becomes instead that aspect of inquiry as a whole that is concerned with our most general and fundamental problems — those problems that cut across all disciplinary boundaries. Philosophy needs to become again what it was for Socrates: the attempt to devote reason to the growth of wisdom in life.

This is the revolution we need to bring about in our traditions and institutions of learning, if they are to be properly and rationally designed to help us learn how to make progress towards a wiser world.

Nicholas Maxwell is Emeritus Reader in Philosophy of Science at University College London. He has devoted much of his working life to trying to get across the message of this essay in numerous articles and five books: *What's Wrong With Science?* (1976), *From Knowledge to Wisdom* (Blackwell, 1984; second edition, enlarged, Pentire Press, 2007), *The Comprehensibility of the Universe* (OUP, 1998, paperback 2003), *The Human World in the Physical Universe* (Rowman and Littlefield, 2001), and *Is Science Neurotic?* (Imperial College Press, 2004).

NICHOLAS MAXWELL, 13 TAVISTOCK TERRACE, LONDON N19 4BZ
nicholas.maxwell@ucl.ac.uk