

that where we believed that we were standing on firm and safe ground, all things are, in truth, insecure and in a state of flux.'

To my mind, Sir Karl Popper was the nearest a person who lived in my times has come to deserving the Platonic mantle of the philosopher king, 'to (commemorate) whom, the state should erect monuments, and offer sacrifices as to demigods, a man blessed by grace, and godlike'. An intellectual of extraordinary calibre, a scholar of encyclopedic and catholic breadth of knowledge, a philosopher of deep foresight and vision and incisive depth, a communicator known for his simple, lucid expression, he produced original ideas which were at the same time, fundamental and simple and which may be remembered twenty centuries from now, much as Plato is remembered and revered today.

This writer shares Mary Midgley's belief that in this age of narrow super-specialization, scientists have become philosophically illiterate. Scientists tend to fear that Sir Karl Popper has put them into a straitjacket, that each time they present a paper at a conference or write one for publication or prepare a proposal for a grant, they have to project it in an

unambiguous Popperian framework, setting out clearly a hypothesis that they must then falsify. It is in fact Popper's assertion that what distinguishes science from other pretensions to knowledge is the preoccupation with ignorance, the readiness to dispel it with a well arranged programme of bold and risky conjecture followed by systematic critical experimentation and refutation. To be prepared to err, to anticipate mistakes by consciously and deliberately seeking them out, to learn from them is therefore what the scientific enterprise is all about. Thus the scientist is different, from say, a politician or a priest, because he is prepared to change his mind as the catalogue of facts change. Popper's philosophy is thus primarily one of action rather than one of obscurantist pedanticism. Scientists and knowledge workers can benefit immeasurably, if they can try to follow Popper in their investigation of their work and accept Sir John Eccles' exhortation to adopt his ideas 'as the basis of operation of one's scientific life'.

It will be appropriate to end this essay on Popper's legacy of *reason with moderation* with two quotations – one, a favourite of Popper's from the pre-Socratic philosopher Xenophanes:

*The gods did not reveal,
from the beginning,
All things to us,
but in the course of time
Through seeking we may learn
and know things better.
But as for certain truth,
no man has known it,
Nor shall he know it,
neither of the gods
Nor yet of all things
of which I speak.
For even if by chance
he were to utter
The final truth, he would
himself not know it:
For all is but
a woven web of guesses.*

and the other from Popper himself:

Man has created new worlds—of language, of music, of poetry, of science; and the most important of these is the world of the moral demands, for equality, for freedom, and for helping the weak.

—*The Open Society
and Its Enemies*, vol. 1, p. 65.

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Sir Karl Popper—Philosopher of science

An obituary by B. V. Thosar

Sir Karl Popper, one of the most eminent philosophers of modern times, passed away on 17 September 1994. He was a refugee from Hitler's Nazism and found refuge in England and spent the rest of his life as Professor in the prestigious London School of Economics, inspiring successive generations of students and leaders in humanistic pursuits—political, social and economic affairs, not only in his adopted country but in all the industrialized countries of the Western World.

Popper is well known as the author of the book, *The Open Society and its Enemies* (Hutchinson, 1959), written nearly five decades ago, which was the strongest criticism of Marxism and one might say, forecast the downfall of com-

munism as practised in Soviet Union, which nevertheless, in those days appeared to advance from strength to strength and came to be recognized as the second super power, nearly comparable to USA. Both these powers based on completely opposite philosophical foundations, resulted in their engagement in what came to be known as the 'Cold War', which had to be accepted by the rest of the world as a fact of political life, from which there seemed to be no escape. However, Popper's uncompromising philosophical opposition to Marxism and deeply held belief in democratic freedom were completely vindicated as we know, through the collapse of Soviet Communism, though it took several decades to happen. There is no doubt that thinkers and leaders

in the free, democratic world, such as Margaret Thatcher drew inspiration from Popper's way of thinking, which strengthened their hands as political activists. The inherent flaws in Marxist philosophy, as discerned by Popper, developed in due course, in bringing about the downfall of a mighty super power. He was, however, in the truest sense a philosopher, giving due consideration to all aspects of a subject under discussion. It has been pointed out, therefore, that he remained fiercely independent, maintaining that he was avowedly anti-Marxist but 'a socialist in the intellectual sense'.

Popper's fame throughout the world rested, as written above, on his opposition to Marxism and advocacy of democratic freedom. It is, however, not generally

known that he was equally eminent as a 'philosopher of science', maybe because this is a comparatively new intellectual discipline, at least in so far as modern science has advanced say, after Newton, for over nearly 300 years. One has to remember, in this context that science is advancing during the recent closing decades of 20th century at a tremendous speed, opening up many new interdisciplinary areas of scientific knowledge such as molecular biology, research in neuroscience and the human brain, not to speak of radio-astronomy and computer science. It is essential and highly important that an overview is taken of all this scientific advance and of its implications for human society, culture and civilization by philosophers who themselves may be non-scientists. This is the role of a philosopher of science and Sir Karl Popper has been acclaimed as the most original and outstanding philosopher of this kind.

One may now mention, though not in much detail, what have been regarded as the most important philosophical ideas of Popper in this new area of knowledge.

Scientific knowledge. According to Popper *Science is Scientific Method*. As he puts it, philosophers are as free as others to use any method in searching for truth. There is no method peculiar to philosophy... The central problem of epistemology has always been and still is the problem of growth of knowledge. *And the growth of knowledge can be studied best by studying the growth of scientific knowledge*. Thus, Popper attaches the highest value to scientific knowledge in man's quest for truth.

Creativity of science. Popper has

propounded new and original ideas about the creation of universally important and fundamental theories in science, such as the theory of relativity and the quantum theory. According to him, there are three points to stress about the process of invention of scientific theory. First, how the theory was arrived at has no bearing on its scientific or logical status. Second, the observations and experiments in question, far from giving rise to the theory, are partially derived from it, and are designed to test it. Third, *at no point does induction come into the matter*. It is important to notice that in Popper's philosophy of science, imagination and intuition are vital and essential components in the process of creativity — the formation of fundamentally new scientific theories and knowledge.

Reality of the objective world. The totally different nature of Popper's philosophy from that of others like the logical positivists may be seen from the following example. The logical positivists would have said that 'God exists' is just meaningless nonsense. Popper would say that it is a statement which has meaning and could be true, but because there is no conceivable way in which it might be falsified it is not a scientific statement. Popper was a realist in today's sense of the word, the sense of believing that a material world exists independently of experience and of human consciousness. This was also Einstein's view on the question of reality of the objective world.

3-World theory. The most original, revolutionary and profound contribution of Popper to scientific philosophy is what is often called the 3-world theory. This theory was developed by Popper in his

discussions with Sir John Eccles, the distinguished neuro-biologist and brain-specialist. They jointly authored a remarkable book, *'The Self and Its Brain'* (Springer, 1977), in which the 3-world theory of Popper is fully elucidated. A very brief account of this theory is given below:

World-1 is the world of physical objects around us and their states. It comprises the whole cosmos of matter and energy and all of biology including human brains. It is clear that science physical as well as biological is primarily concerned with investigation using the scientific method of this World-1. World-2 is the subjective world of minds. It is the world of states of consciousness and subjective experiences. World-3 is the world of objective knowledge and it comprises the whole of culture and civilization, most importantly, language. It is the world of ideas, art, science, language, ethics, institutions—the whole cultural heritage in short—in so far as it is encoded and preserved in such World-1 objects as brains, books, machines, computers, pictures and records of every kind. Although all entities are products of human minds, they may exist independently of any knowing subject.

The importance of what Popper calls World-3 is obvious. It forms the basis in fact, on which the future evolution of man and his civilization will occur.

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